SPRECKELS

SUGAR BEET

BULLETIN

Vol. 28 1964

AGRICULTURAL DEPARTMENT--SPRECKELS SUGAR COMPANY

Address and Telephone Numbers

NAME	TITLE	ADDRESS	TELEPHONE
	ADMINISTRATIVE OFFICE		
Dr. Russell T. Johnson	*Vice President*	SAN FRANCISCO *2 Pine Street*	*DOuglas* 2-5600
Hugh F. Melvin	*Agricultural Manager*	"	"
John M. Kendrick	*Assistant Agricultural Manager*	"	"
S. Loyd Stovall	*Manager, Beet Pulp Sales & Livestock Specialist*	"	"
	RESEARCH		
Lauren M. Burtch	*Chief Agronomist*	MENDOTA	*OLiver* 5-4208
Dr. Varon Jensen	*Plant Physiologist*	SPRECKELS	*GLenview* 5-1811
George W. Wheatey	*Agronomist*	"	"
Jack H. Brickey	*Agronomist*	WOODLAND	*MOhawk* 2-3261
Laurn K. Beutler	*Agronomist*	MENDOTA	
Dr. James D. Schulke	*Plant Breeder*	SPRECKELS	*GLenview* 5-1811
	ENGINEERING		
Austin A. Armer	*Agricultural Engineer*	WOODLAND	*MOhawk* 2-3261
Thomas F. Ryan	*District Engineer—Dist. 1*	SPRECKELS	*GLenview* 5-1811
John O. Nielsen	*District Engineer—Dist. 2-3-4*	MENDOTA	*OLiver* 5-4208
Robert B. McGregor	*Assistant District Engineer*	"	
	DISTRICT #1—SALINAS VALLEY		
Walter H. Buckingham	*District Manager*	SPRECKELS	*GLenview* 5-1811
J. Byron Larsen	*Agricultural Superintendent*	"	"
Harold H. Voth	*Field Superintendent*	"	"
Arthur C. Young, Jr.	" "	"	"
J. Norman Dawe	" "	"	"
Richard T. Schonfelder	" "	"	"
James E. Gardiner	" "	KING CITY *P. O. Box* 87	385-3307
	DISTRICT #2—NORTH SAN JOAQUIN VALLEY		
Ralph S. Lambdin	*District Manager*	MANTECA	*TAlbot* 3-3121
John R. MacDougall	*Agricultural Superintendent*	"	"
Joseph W. Hull	*Field Superintendent*	"	"
Ernest B. Moeller	" "	"	"
Roger S. McEuen	" "	"	"
Virgil M. Horton	" "	"	"
Olen C. Zircle, Jr.	*Assistant Field Superintendent*	"	"
John W. Bryan	*Field Superintendent*	WALNUT GROVE *P. O. Box* 36	*SPring* 6-3371
	DISTRICT #3—SACRAMENTO VALLEY		
Donald R. Hefner	*District Manager*	WOODLAND	*MOhawk* 2-3261
William R. Duckworth	*Agricultural Superintendent*	"	"
Charles M. Carlson	*Field Superintendent*	"	"
Michael T. Daugherty	" "	"	"
Jay N. Hill	" "	"	"
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Gene A. Wilkinson	" "	"	"
Melvin H. Voos	*Field Superintendent*	"	"
Morris B. Ball	*Assistant Field Superintendent*	"	"
	DISTRICT #4—SOUTH SAN JOAQUIN VALLEY		
Dan L. Dieter	*District Manager*	MENDOTA	*OLiver* 5-4208
Stewart S. Anderson	*Agricultural Superintendent*	"	"
Dan B. Banta, Jr.	*Field Superintendent*	"	"
Stanley D. Bayer	" "	"	"
Gerald G. Nordstrom	" "	"	"
William H. Hodson	" "	VISALIA 134 *N. Linwood Ave.*	732-1324
William J. Hurley	" "	LOS BANOS 1607 *Fourth St.*	826-4182
Vernon D. Sherwood	" "	VISALIA 1334 *Chatham Dr.*	732-7107
Walter H. Titcomb	" "	HANFORD 240 *West Colonial Ave.*	582-3011
Marshall L. Pylman	*Assistant Field Superintendent*	MENDOTA	*OLiver* 5-4208
J. Gib Maurer	*Agricultural Superintendent*	BAKERSFIELD 431 *Kentucky St.*	*FAirview* 4-4904
Robert Alderson	*Field Superintendent*	"	"
Martin Chernek, Jr.	" "	"	"
Frank R. Nelson	" "	"	"
	SPRECKELS SUGAR BEET BULLETIN		
Austin A. Armer	*Editor*	WOODLAND	*MOhawk* 2-3261

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SPRECKELS SUGAR BEET BULLETIN

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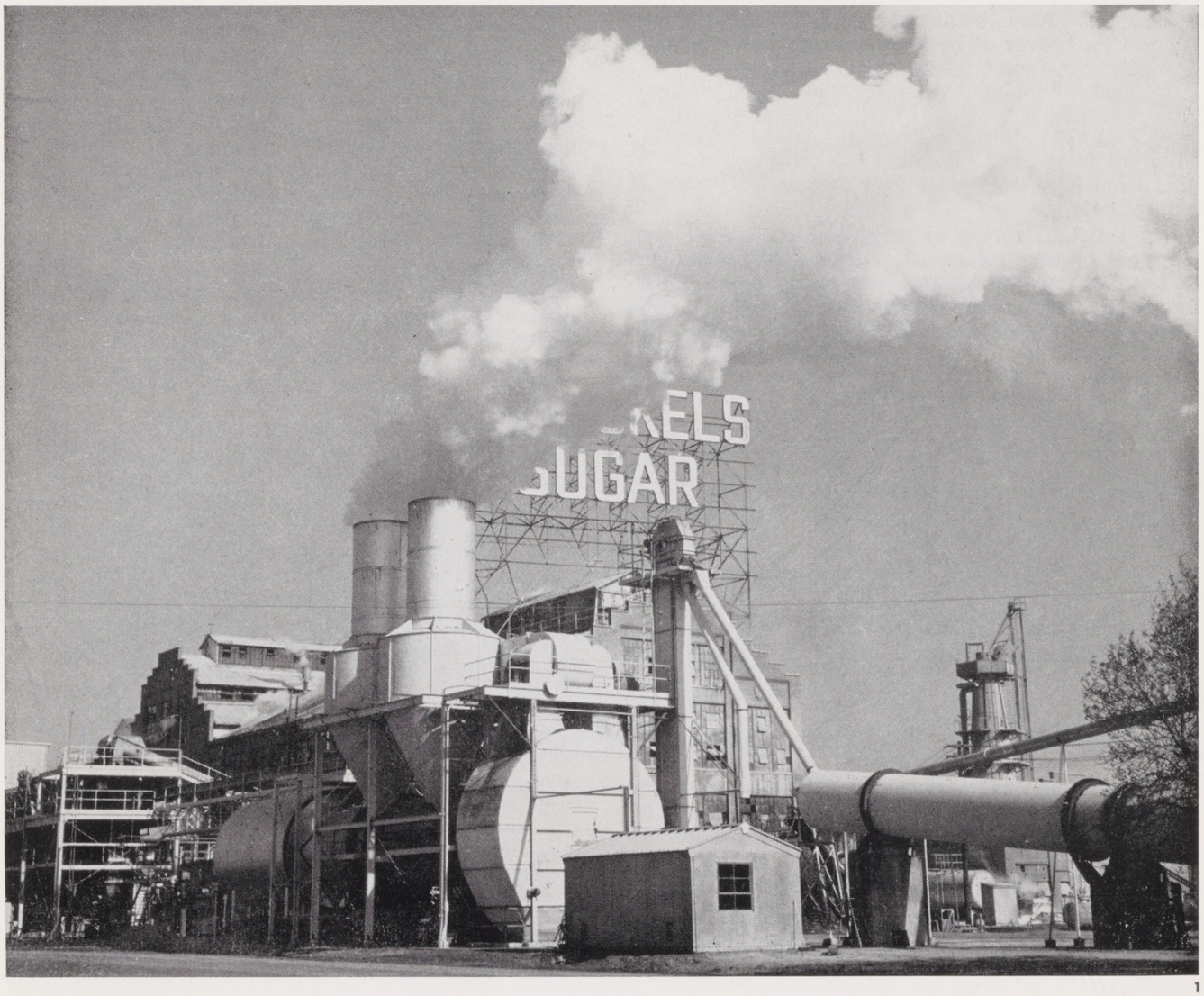

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THE MANTECA FACTORY

Ready for spring harvest

1963 BEET CROP SETS RECORDS

By DR. R. T. JOHNSON

Vice President, Spreckels Sugar Company

1963 WAS A YEAR of records. Due to the construction of a new sugar beet factory at Mendota, Spreckels Sugar Company contracted for approximately 150,000 acres of beets for the 1963 crop. This was far in excess of any amount we had previously contracted. Also, beginning in 1963, we had the biggest carryover of beets remaining in the ground from the previous crop than we had ever before experienced. This amounted to about 500,000 tons. This was also a record. Finally, and most gratifying, the 1963 Fall harvest period allowed the setting of another record. Of the 1963 crop, we have at this time harvested well over two million tons of sugar beets.

Intermittent spring rains had delayed the beginning of our spring harvest of these 1962 crop beets so that we were unable to operate our factories efficiently on spring beets until about May 1st. This necessitated our spring harvest continuing well into June. This was the latest termination date for a spring harvest yet. Tonnage appeared to continue to increase during the spring harvest period and sugar content remained relatively stable. It was indeed gratifying to see these results. Some of the effects of the development of slow bolting strains of beets were apparent in the spring of 1963, with overwintered beets bolting at a rate far less than expected.

1963 ACREAGE SETS RECORD

As pointed out above, the acreage contracted for 1963 was the largest in Spreckels history. Most of the increase was contracted in the South San Joaquin Valley that would produce beets tributary to the new Mendota facility.

Generally speaking, planting operations were timely. Crops got off to a good start. Planting in the north end of the San Joaquin Valley and the Sacramento Valley was delayed to permit the completion or near completion of the spring harvest of the 1962 crop before the 1963 crop was planted. Growers in these areas had, in most cases, done an excellent job of ground preparation and had prepared to irrigate for emergence. These factors were an extreme asset to a crop where planting had been delayed and consequently the prospective growing season appeared short.

Spring and summer growing conditions were generally ideal for sugar beet production. Temperatures over 100° were encountered in the interior valleys only rarely. By June of 1963 it was apparent that in much of our beet-growing area a beet crop was being produced that would approach a record crop. Harvest of the 1963 crop started in early July and by mid-August all four of our mills were operating primarily on beets grown in the southern San Joaquin Valley. This is indeed a tribute to the beet growers in that area who persisted in beet growing in an area where only a few years ago this crop appeared to have a questionable future.

HIGH YIELDS IN 1963

After a poor 1962 crop in the coastal areas, the 1963 crop proved to be excellent, yielding over 27 tons per acre. Due to the late harvest of the 1962 crop in the spring of 1963 and the late planting of the 1963 crop in the north San Joaquin and Sacramento Valleys, harvest in these areas was delayed to enable a satisfactory crop to develop. Considering the short growing season, generally good crops were produced by November in this area. Due to the late planting, they had developed relatively free from virus yellows, but in the fall of 1963 there was a high incidence of infection by *Cercospora* leaf-spot in much of the Sacramento Valley area. This resulted in a heavy defoliation of the sugar beets and was, to some extent, responsible for the low sugar content produced in that area.

Another and persisting cause of low sugar content continues to be the availability of excess nitrogen to sugar beets at harvest time. In more and more instances our agricultural research studies find nitrogen to be used in excess quantity on sugar beets. A good example of this is a reference to our 1963 fertilizer studies. In the interior valleys we conducted five replicated fertilizer trials in 1963 in which nitrogen application rates were varied to determine the effects of nitrogen. In four out of five of these studies we were unable to demonstrate any yield improvement in the higher nitrogen application rates. The inference here is relatively simple. In four out of five of these fertilizer tests there was enough nitrogen in the soil, applied to but unused by previous crops, to grow an adequate sugar beet crop in 1963. Excessive nitrogen usage on sugar beets costs the grower money in two ways; the first is the direct cost of the fertilizer, and the second is that if nitrogen is applied in quantities that cannot be utilized by the sugar beets and, therefore, is not reflected in increased yields, the only effect of such application is to reduce sugar content, thereby making the beets worth less in dollars per ton. We have suggested, and continue to suggest, leaving narrow skips in fertilizer application in beet fields to help each grower get a better idea of his own requirements for nitrogen on sugar beets.

LONG FALL HARVEST

Harvest of the 1963 crop continued at a relatively rapid rate throughout the fall, with interruption due to rain in October and November. Compensating for this, however, December was one of the driest Decembers on record in California, and consequently harvest of the 1963 crop continued throughout December and most of January of 1964.

Even before the processing of the 1963 crop is nearing completion, our 1964 crop is well under way in some areas. Planting of the 1964 crop is well over half completed in our coastal districts and in the south San Joaquin. Good stands are being achieved and at this time it looks as if another excellent crop is already in progress.

SPRECKELS AGRICULTURAL DEPT. HOLDS ANNUAL STAFF MEETING

EACH YEAR the field superintendents, district agricultural superintendents and managers meet with the administrative and research staff of the Agricultural Department to exchange ideas and establish policies.

The 1964 meeting was held at West Sacramento's El Rancho Motel, Jan. 21 through 24. The first day's program was presented by invited speakers, here listed:

Weighmaster Law—	Robt. W. Horger, Program Supervisor, Bureau of Weights and Measures, State of California
Weather Forecasting—	Norman S. Benes, Meteorologist, U.S. Department of Commerce, Weather Bureau
Water Plans—	Alfred R. Golze, Chief Engineer, Calif. Department of Water Resources
Wildlife and Pesticides—	Eldridge Hunt, Fish and Game Commission, State of California
"Is Your Money Working As Hard As You Are?"—	Arthur Larson, Vice President Hannaford & Talbot

An entire day's program was devoted to agricultural research, with presentations by Dr. Russell T. Johnson, Lauren Burtch, Dr. James Schulke, Dr. Varon Jensen, George Wheatley, Jack Brickey and Stewart Anderson.

Another day was devoted to discussions by executives in the Operating and Sales Departments, followed by addresses from the chief administrative officers of the Operating, Sales and Accounting Departments.

Pictured below are the Administrative, Research and Service Staff, presented by District. Individual names, addresses and telephone numbers appear on the inside front cover of the 1964 SUGAR BEET BULLETIN file cover.

Administrative Staff, San Francisco.

Agricultural Research and Service Staff, Spreckels

Agricultural Service Staff, Manteca

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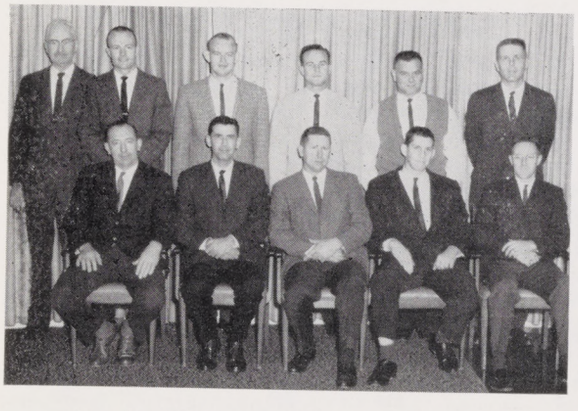

Agricultural Research and Service Staff, Woodland

Agricultural Research and Service Staff, Mendota

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TWO SPRECKELS MEN HONORED

TWO MEMBERS of the Spreckels Sugar Company's agricultural department were honored by their fellow sugar beet technologists during the 13th biennial meeting of the American Society of Sugar Beet Technologists in San Francisco on February 5.

Hugh F. Melvin, San Francisco, agricultural manager for the firm, received the Society's Forty-Year Veteran Award. Austin A. Armer, Woodland, Spreckels' agricultural engineer, was presented with the Meritorious Service Award.

Presentations were made at the Society's banquet highlighting the organization's general meeting at the Sheraton-Palace Hotel.

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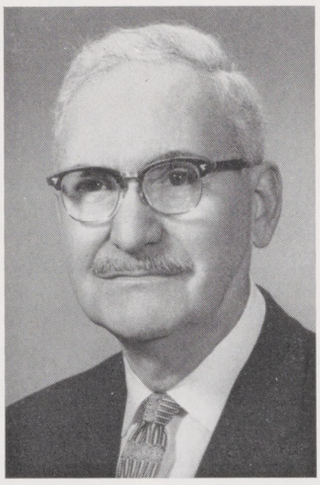
HUGH F. MELVIN



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AUSTIN A. ARMER

Mr. Melvin, who has been associated with the Spreckels Sugar Company since 1924, was honored for his long and distinguished service to the beet sugar industry. His career with the company has spanned the growth of Spreckels from a two-factory operation to its present four factories.

A graduate of the University of Southern California, for some 30 years Mr. Melvin was affiliated with the Spreckels' Sacramento-San Joaquin Valley operations. In 1954 he was named agricultural manager for the company and transferred to the company's San Francisco headquarters and now serves in that capacity.

Mr. Armer was honored for rendering outstanding service in promoting the objectives of the society and for contributing to the industry's technology.

Holder of a B.S. degree in electrical engineering and an M.S. degree in physics — both from the University of California at Berkeley — Mr. Armer has been with Spreckels since 1943. Prior to that time he served as a research associate at the Davis campus of U.C. where he worked on the design of sugar beet harvesting machinery.

In 1951 he spent three months in Europe as technical consultant to the Marshall Plan. He was President of The American Society of Sugar Beet Technologists, 1956-1958. More recently his engineering activities have been directed toward the design and construction of sugar beet receiving facilities.

TULARE COUNTY NEMATODE SURVEY

EDITOR'S NOTE: *Following are excerpts from a report submitted to California's County Agricultural Commissioners by George A. Alstatt, Acting Chief, Bureau of Plant Pathology, State Department of Agriculture.*

Sugar beet growers throughout the state, and particularly those in the Southern San Joaquin Valley, would be well advised to study this report, and to familiarize themselves with local ordinances by reading the succeeding article, "County and State Regulations Control Spread of Nematode."

FOLLOWING THE DISCOVERY of an infestation of sugar beet cyst nematode in a Tulare County beet planting in June, 1961, a cooperative survey program was initiated to gather information on distribution of this pest in the southern San Joaquin Valley. This progress report is submitted to inform you of the results of tare soil sampling of beet crops during 1961, 1962 and 1963.

SURVEY METHODS

The survey has been a cooperative effort involving the sugar beet industry, the California Department of Agriculture, and the agricultural commissioners of Fresno, Kern, Kings, Madera, Merced, Stanislaus, and Tulare Counties.

Loading station operators, in most cases using a special sampling screen and container, collect one-pint samples of fine tare soil as it drops through the shaker screens at the loading stations. One such sample is collected each day from each contract which delivers to the station during the day. The samples are placed in labeled paper bags, transported to central collecting points, and stored until dry. They are then checked for the presence of nematode cysts by nematologists of the Bureau of Plant Pathology at a branch laboratory located at Minter Field in Kern County.

When cysts are found in a sample of tare soil, the source of the sample is determined and soil samples are collected from the field through the cooperation of the county agricultural commissioner. These are screened and examined for cysts in the Sacramento nematology laboratory.

SAMPLES EXAMINED

During the period since the survey was initiated, sugar beet tare soil samples have been collected and examined. The exact field sources of these cannot be reported by counties, because some loading stations collect the harvest from fields in more than one county; they are, therefore, reported according to location of the station where the samples were collected, as follows:

County	Samples Collected at Loading Stations			
	1961 Crop	1962 Crop	1963 Crop	Total
Fresno	111	114	767	1,192
Kern	653	1,368	1,359	3,380
Kings	0	47	69	116
Merced	529	353	—	882
Stanislaus	180	167	—	347
Tulare	198	0	871	1,069
Total	1,871	2,049	3,066	6,986

The samples were collected by loading station personnel of the following sugar beet processors:

	1961	1962	1963	Total
Holly Sugar Corporation ..	235	0	440	675
Spreckels Sugar Company	1,605	2,049	2,626	6,280
Union Sugar Company	31	0	0	31

Processing and examining these samples was under the supervision of Sadek M. Ayoub, Plant Nematologist, Bureau of Plant Pathology.

RESULTS

Previous to this survey, sugar beet cyst nematode had not been detected in the southern San Joaquin Valley except on one property near Strathmore in Tulare County. This infestation had been detected through field symptoms in June, 1961.

During the tare soil survey of the 1961 and 1962 crops, eight of the 3,920 samples examined were found to contain cysts resembling *Heterodera schachtii*. Three of the eight samples were taken from the infested property mentioned above; one was from a ranch near Waukena, Tulare County, farmed by the same people and with the same equipment. Two of the positive samples were from a sugar beet field about seven miles east of Pixley, Tulare County; this infestation, like both the previous ones, was confirmed by soil sampling in the field. A fourth property in Tulare County near Alpaugh is under suspicion because one tare soil sample contained cysts. Soil sampling from this last property has so far failed to confirm that an infestation exists there.

CONCLUSIONS

Nearly 50,000 acres of sugar beets have been harvested each year in the areas covered by the 1961 and 1962 surveys. The world sugar situation brought about a great increase in beet planting in the southern San Joaquin Valley for the 1963 season. Acreage of sugar beets in Kern and Tulare Counties is estimated as nearly twice that of 1962, and a large new processing plant has been built in western Fresno County. This important and growing industry deserves protection from one of its worst potential enemies.

Results of the survey to date indicate that distribution of *Heterodera schachtii* in the southern San Joaquin Valley is extremely limited, and that continued efforts to detect incipient infestations and prevent further spread are amply justified.

The Bureau of Plant Pathology appreciates the fine cooperation it has received from the beet sugar industry and county agricultural commissioner in this survey effort, and trusts that the project will merit their continued support.

COUNTY AND STATE REGULATIONS CONTROL SPREAD OF NEMATODE

CERTAIN AREAS of California are, at present, free from infestation by sugar beet nematode (*Heterodera schachtii*). These include important sugar beet growing areas in Fresno, Kings, Riverside and Tulare counties.

In 1961 sugar beet nematode was found in Tulare County, a county previously believed free of the pest. This finding led to a survey to determine extent of infestation in the southern San Joaquin Valley, and on Sept. 5, 1963, the California Agricultural Code was amended by the addition of Subsection (c) to Section 3555. The language of Subsection (c) follows:

"(c) *Sugar Beet Nematode* (1) *Pest.* Sugar beet cyst nematode (*Heterodera schactii*)

(2) *Appliance Capable of Disseminating Pest.* Farming implements and machinery and field equipment, trucks, tractors or other appliances which have been used or operated in culturing, harvesting or transporting sugar beets.

(3) *Treatments.* (A) High pressure steam clean until all soil and debris is removed; OR (B) Removal of soil by washing, followed by a thorough drenching spray using one part 40% formaldehyde to nine parts water."

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By authority of Section 127 of the California Agricultural Code, County Agricultural Commissioners are empowered to enforce control measures. Accordingly, Agricultural Commissioners of Fresno, Kings, Riverside and Tulare counties have imposed restrictions on the movement of all equipment used in the growing, harvesting or hauling of sugar beets. These restrictions include the requirement that all used equipment entering these counties must be accompanied by proof that such equipment has (a) been steam cleaned or (b) not exposed to infection.

All sugar beet growers, or their contracting machinery operators, *must* hold their equipment for inspection before entering Fresno, Kings, Riverside or Tulare counties. Arrangements for such inspections should be made with the appropriate Agricultural Commissioners at the following locations:

L. D. McCorkindale
Fresno County Agricultural Commissioner, Fresno
Phone 233-2181 or 268-2522

Claude W. Bridges
Kings County Agricultural Commissioner, Hanford
Phone LUdlow 4-3331, Ext. 261.

Robert M. Howie
Riverside County Agricultural Commissioner, Riverside

Elvin O. Mankins
Tulare County Agricultural Commissioner, Visalia
Phone REdwood 2-5511, Ext. 306 or SUnset 4-2489, Porterville.

GROWERS AND PROCESSORS GATHER AT CONFERENCES AND MEETINGS

JANUARY AND FEBRUARY are the traditional months for California agriculturists to gather at the meeting place, to compare notes, exchange ideas and formulate policies for the coming season.

Beet growers and processors are no exception — they attend their own gatherings, as well as those of general interest to all whose interests relate to agriculture.

CALIFORNIA BEET GROWERS ASSOCIATION held their annual member meeting at San Francisco's Sheraton-Palace Hotel on January 31. Principal speaker was Tom O. Murphy, Director of the Sugar Policy Staff, A.S.C.S., United States Department of Agriculture. A panel of experts from Federal, State and processor research groups was moderated by Dean Pryor, CBGA, District 7 President.

33RD ANNUAL FARM MACHINERY CONFERENCE was held at the Davis Campus of the University of California on January 30 and 31. Progress reports were presented on developments by industry and State Experiment Station in the mechanization of such crops as melons, lettuce, Ladino clover, citrus fruits, bush berries, tomatoes and cling peaches. The broader aspects of agricultural education, economics and technology were also covered.

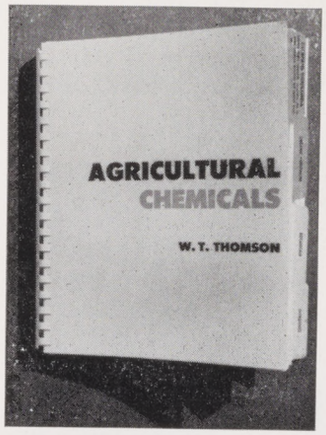
AMERICAN SOCIETY OF SUGAR BEET TECHNOLOGISTS held their thirteenth biennial meeting at San Francisco, February 3 to 6, in the Sheraton-Palace Hotel. In attendance were more than 600 delegates from the United States and eight foreign countries, including Canada, England, Germany, Denmark, Belgium, The Netherlands, Italy and Iran. Section meetings covered the subjects of Agronomy, Genetics and Variety Improvement, Entomology, Plant Pathology, Agricultural Engineering, Chemistry, Physiology and Factory Operation.

Twelve members of Spreckels Sugar Company Agricultural and Operating Departments contributed papers. General Program Chairman was Dr. Russell T. Johnson, Spreckels Sugar Company Vice President. Austin Armer was chairman of the Agricultural Engineering Section and master of ceremonies at the banquet.

CALIFORNIA WEED CONFERENCE attracted an overflow audience in Sacramento, January 21 to 23. Keynote address was by the Conference President, William L. Hopkins. Dr. Alden S. Crafts, U. of C., Davis, gave the welcoming address.

CALIFORNIA IRRIGATION INSTITUTE met at Fresno, January 27 and 28. Eighteen technical papers were presented following a Welcome To Fresno by Hon. Wallace Henderson, Mayor of Fresno.

COMPREHENSIVE PESTICIDE MANUAL NOW AVAILABLE



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"AGRICULTURAL CHEMICALS" is the title of a 219 page manual compiled by W. T. Thomson. The manual's preface states in part:

"Attacks on the use of agricultural chemicals have been coming from all sections of the country, mainly due to the misunderstandings of an uninformed public. Only through the prevention of these mistakes, by taking the proper precautions and knowing the materials that are being worked with can these unfortunate situations be prevented."

"Knowing the materials" can be accomplished in a very few minutes, since the tab-indexed manual describes in detail some 580 trade-names. For each chemical listed, there is given the trade-name, chemical and structural formula, type, origin, toxicity, formulations, phytotoxicity, uses, pests controlled, rates, application methods, and precautions.

Twenty pages are devoted to generally useful information concerning sprayer calibration, application calculations, conversion tables, definitions, etc.

AGRICULTURAL CHEMICALS may be obtained for $5.00, postpaid from Simmons Publishing Co., Dept. A., P. O. Box 39, Davis, California, 95616.

SUGAR INDUSTRY LAUNCHES NATION-WIDE ADVERTISING CAMPAIGN

THE POSITIVE SIDE of the sugar story is now being told on the pages of the nation's leading magazines. The sugar industry — through Sugar Information, Inc. — has launched an aggressive national advertising program to inform American consumers of the important role of sugar in the normal diet.

Publications such as LIFE, TIME and THE READER'S DIGEST — whose combined circulation incidentally reaches virtually every adult in the nation — will carry a continuing series of full page ads describing the natural benefits of sugar.

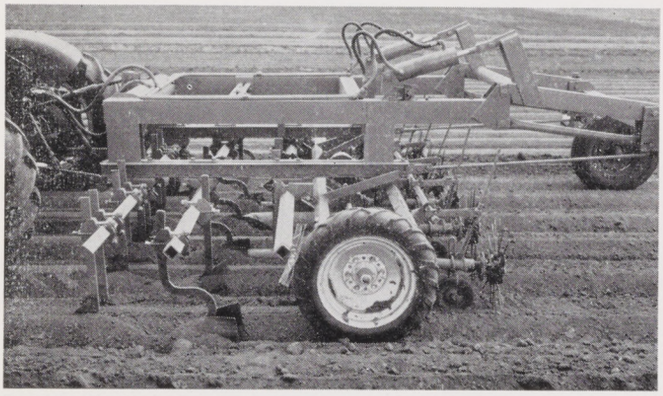
The American housewife, who is the ultimate buyer of all food products, will be reminded through these ads that sugar is nutritional, that it provides needed energy and that sugar brings out the natural flavor of food. She will also be alerted to the fact that for the most part these benefits are lacking in artificial sweeteners.

The Sugar Information advertising campaign was kicked-off with January ads in LIFE and TIME and the initial READER'S DIGEST ad appears in that publication in February.

MANUFACTURERS PRESENT NEW TOOLS FOR PLANTING, THINNING & CULTIVATING

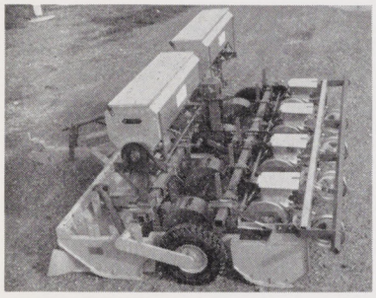
Eversman Photo 8

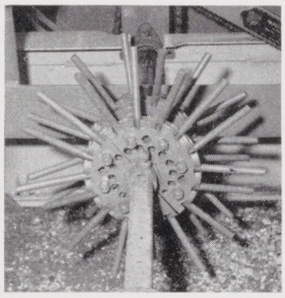
EVERSMAN "TILLER-INCORPORATOR" is shown above equipped for incorporating granular herbicide (Noble applicator) and planting sugar beet seed (International No. 185 planter units).



Eversman Photo 9

EVERSMAN "TILLER-INCORPORATOR" is here shown, retooled for cultivating and thinning.





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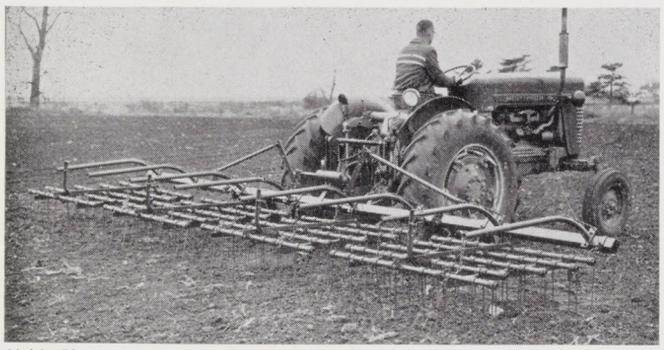
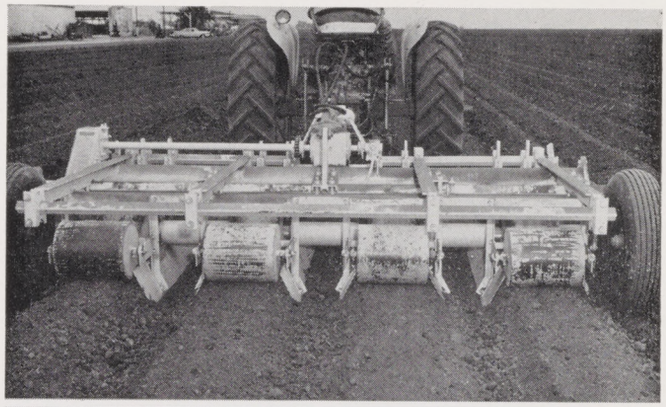
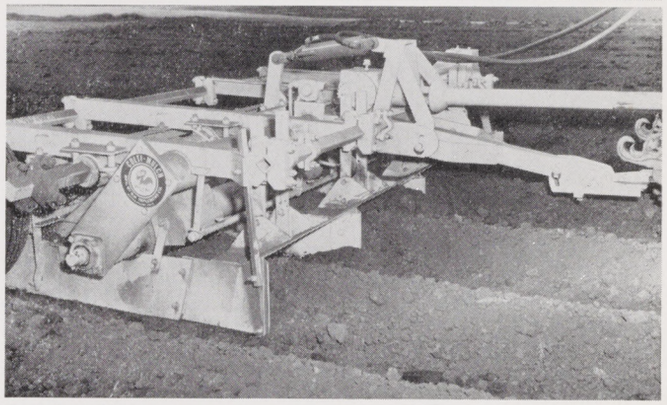
LEFT — K-C sled equipped with Harbison-Paine incorporator, granular herbicide applicator and Milton planter units.
RIGHT — Detail of incorporator rotor, with case removed.



Noble Photo 11

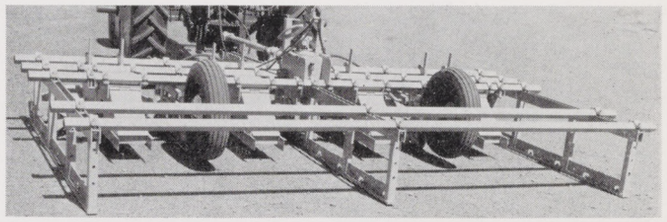
NOBLE spring tine harrow is now available to fit any standard 3-point tractor hitch. Hydraulic cylinder raises outer sections for transport.





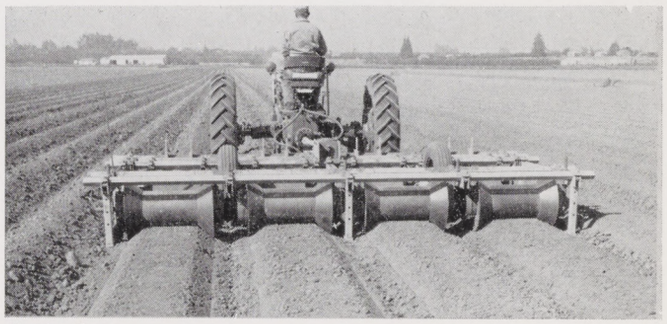
Emil Frost Photo 12

B-W "CULTIMULCH" shapes beds and incorporates liquid herbicides (See Spreckels Sugar Beet Bulletin, Nov.-Dec., 1963, page 46).



Marvin Photo 13

MARVIN "ROWMASTER" bed shaper is factory-equipped with liquid herbicide pump and nozzles, as well as PTO driven Bye-Hoe incorporator.

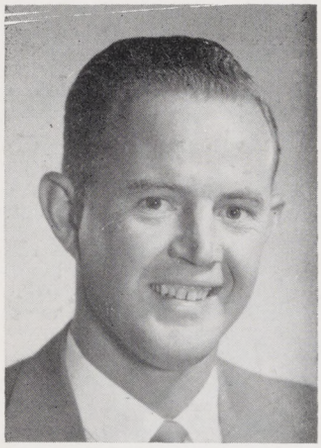


Marvin Photo 14

BED-FIRMING Spools are optional on Marvin "Rowmaster" bed shaper, and should be used if soil is light or sandy.

Notes from Our Field Men

VERNON D. SHERWOOD, MENDOTA



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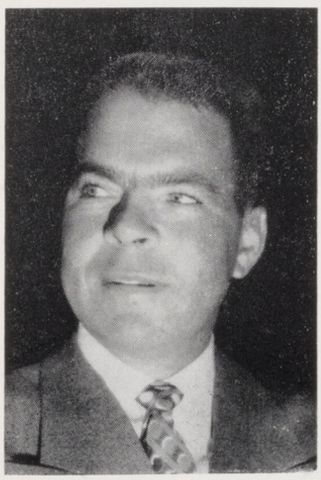
In 1961, when the first sugar beet nematode survey was conducted in Tulare county, there appeared three fields infested with this disease. This year, when the survey was made in Tulare County, there appeared six nematode infested fields.

It is more than likely that there is a correlation between the appearance of nematode and the use of the same equipment on different ranches. Since these ranches are not necessarily adjoining, the evidence obtained indicates that the organism must be carried either by uncleaned equipment or some other means.

In the past year sugar beet nematode was located on ranches where an exchange of equipment between the farmers had taken place. This appears particularly evident in the case of family relationships which might be especially conducive to the exchange of equipment. These observations bring out the importance of cleaning all equipment, that of custom operators in particular, which moves between ranches, so as to avoid wider distribution of the organism.

HAROLD VOTH, SPRECKELS



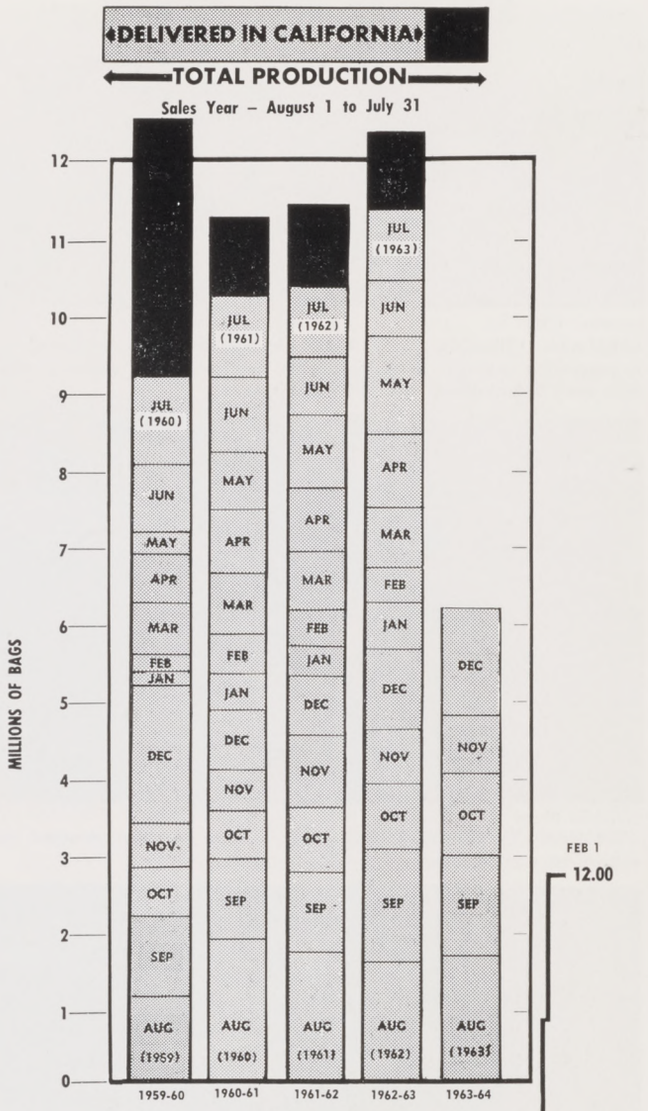
16

Several growers are using Tillam for weed control in fields where weeds generally have been a problem. Certainly one will be able to properly evaluate the effectiveness of this herbicide because of its intensive use this year.

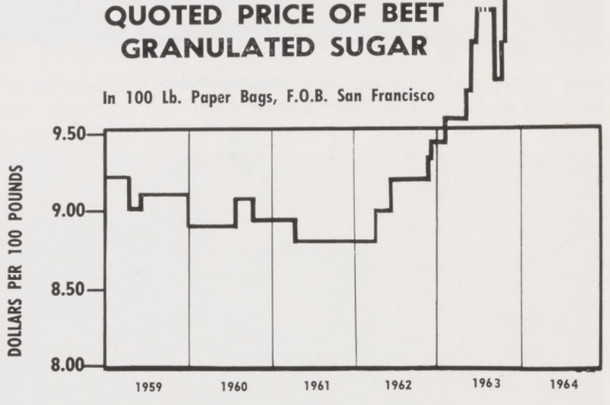
A few growers are still using Endothal, but only in heavy soils where good control is not endangered by leaching of the chemical.

The widespread interest in Tillam was evident from the many papers on this subject presented at the ASSBT meeting at San Francisco.

PRODUCTION AND DELIVERIES OF BEET SUGAR IN CALIFORNIA



QUOTED PRICE OF BEET GRANULATED SUGAR



17

The SPRECKELS SUGAR BEET BULLETIN is issued bi-monthly by the Agricultural Department of the Spreckels Sugar Company as a service to its growers. Mention of specific methods, devices and implements does not constitute an endorsement by the Company. All photographs by the editor unless otherwise indicated.

AUSTIN ARMER, EDITOR SPRECKELS SUGAR COMPANY WOODLAND, CALIFORNIA

SPC - DAVIS

PUBLISHED FOR CALIFORNIA SUGAR BEET GROWERS BY THE SPRECKELS SUGAR COMPANY

SPRECKELS SUGAR BEET BULLETIN

VOL. 28 MARCH-APRIL, 1964 NO. 2

18

FAR SIGHTED FARMING

Careful bed shaping, precision planting and incorporation of weedicides will benefit the future operations of

THINNING

CULTIVATING

IRRIGATING

HARVESTING

SPRECKELS ARIZONA FACTORY WILL PROCESS BEETS FROM 1966 CROP

SECRETARY OF AGRICULTURE Orville L. Freeman announced on April 17 the allocation of 20,000 acres to Arizona for sugar beet production starting with the 1966 crop year.

The acreage allocated is expected to produce about 50,000 short tons, raw value, of beet sugar, as specified in the Sugar Act. The announcement states that individual growers plantings shall be limited to 80 acres.

The factory to serve Arizona growers will be constructed by Spreckels Sugar Company in the general vicinity of Phoenix. The proposed factory will have a daily capacity of approximately 4,000 tons of beets.

This factory will be the first constructed outside the state of California by the Spreckels Sugar Co.

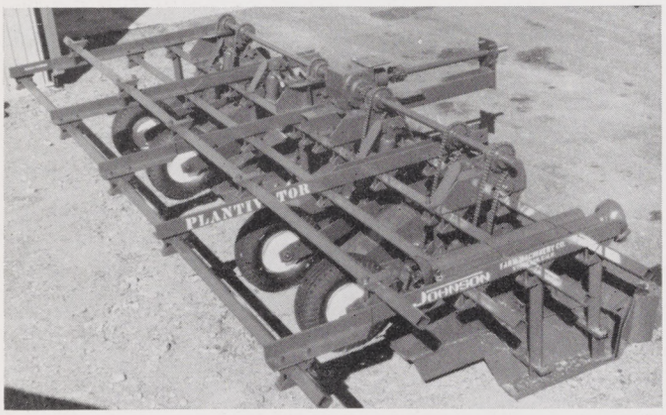
FAR SIGHTED FARMING STARTS WITH SEED BED PREPARATION

A QUIET REVOLUTION is taking place in Western row-crop fields. The victims of this revolution are the many separate tools employed to shape beds, preplant fertilizer, plant the seed, thin the stand and finally cultivate.

The victor is the sled tool carrier — one implement which consolidates these various operations and adds the innovation of weedicide application.

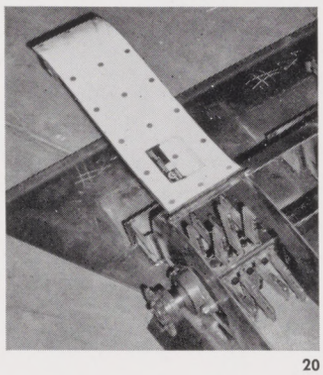
Manufacturers of sled tool carriers are using their background of experience in refining and perfecting their products. Johnson Farm Machinery Company of Woodland is an example.

The Johnson Plantivator is now available with built-in weedicide incorporator; is available in either 4 or 6 row models, and is made in either pull type with tongue, ground wheels and hydraulic lift, or fast-hitch type to fit 3-point fast-hitch tractors.



19

ABOVE—JOHNSON PLANTIVATOR 6-row pull type bed former, planting sled and weedicide incorporator. (4 row models also available.)



20

RIGHT—PLANTIVATOR incorporator rotor has easily replaced, hard faced straight tines. Cover is lined with DuPont Teflon — to which mud will not adhere.

MECHANIZING THE HARVEST OF EXPERIMENTAL PLOTS

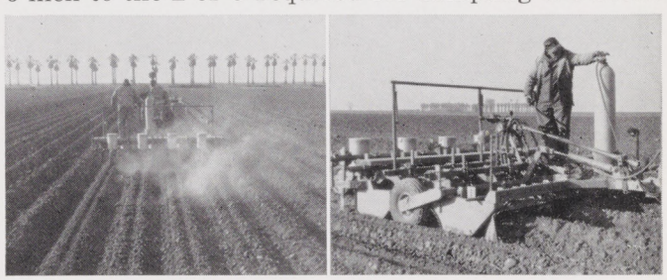
By L. M. BURTCH

Chief Agronomist, Spreckels Sugar Company

FOR MANY YEARS preceding 1957, Spreckels Sugar Company's experimental plot harvest was accomplished by using a borrowed tractor to lift beets and a six man crew to top, sample, gather, weigh, and finally pile the beets on the ground. Later, the crew hand-loaded each pile into the grower's truck. This system required approximately 80 man hours per plot, but was satisfactory in the days when good labor was available and the Central Valley research program consisted of 15 to 18 plots per year. (It should be noted that each "plot" consists of 96 separate beet rows, each 60 feet long.)

By 1957 a disappearing source of field labor and an expanding program provided the needed incentive to mechanize. Consequently a plot harvesting truck was designed and constructed by the agricultural engineering staff at Woodland. This equipment was the first step in the mechanization of the Central Valley harvest of experimental plots.

The truck consisted of a standard beet box which was fitted with a removable tail gate. A power take-off operated hoist with swinging boom was mounted on the rear of the truck. This truck permitted the research staff to become relatively self-sufficient, for we could transport our own tractor, fitted with a topping unit, plows and a Rienks cleaning screen. The extra labor force was reduced from 6 men to the 2 or 3 required for sampling the beets.



21

COVER COMMENT—Vincent Kovacevich, farming west of Fresno, plants beets with a K C sled equipped with Milton planter units and Byehoe tillers to incorporate liquid Tillam.

Feature of the planter combine (right) is the high-pressure nitrogen cylinder devised by Mellville E. Willson Company, which maintains exactly 18 pounds per square inch pressure at the Tillam spray nozzles, and eliminates the troubles and uncertainties of a PTO pump.

A large metal bucket was carried on the side of the truck and two men tossed, topped, and lifted beets from the ground into the bucket as the truck was driven slowly down the row. At the end of each plot the bucket was weighed and lifted over the truck bed. When the bucket was in position, swinging doors opened and the beets fell into the truck.

This equipment did not eliminate labor, but it reduced the labor requirement needed to harvest a plot from 80 man hours to 40 man hours.

MORE RESEARCH — NEW DEMANDS

As interest in beets and beet acreage expanded, more studies on planting and harvest dates, disease problems, fertilizer and irrigation relationships became necessary. More and larger plots were established, and the harvester trucks were no longer adequate.

In the spring of 1962, the Farmhand Company made available for testing a pilot model of a new 1-row pull-type beet harvester with a nip roll cleaning screen. This harvester was used on a number of large fertility and moisture plots in 1962 in connection with the harvester truck, and was found to deliver clean, well-topped beets under a wide variety of soil, trash and moisture conditions.

The next step was taken in the spring of 1963, when a receiving station tare scale was combined with a bottom-opening basket, together with a sample catcher and larger platform. The operating sequence with the new equipment is illustrated in figures 1 through 6.

The converted Farmhand harvester has resulted in a further reduction in man hours required for plot harvest from 40 to 20. Three men (or in an emergency two men) can now move into a grower's field, set up and complete the harvest of a standard variety trial in less than one third the time required by a crew of 8 in 1957. The investment in the relatively complex harvesting unit will pay for itself in a short time by the saving in labor because of the ever-growing number of experimental plots.

More important, however, is the knowledge that we can operate efficiently while meeting the grower's field conditions, good or bad. During the 1963 crop year, a total of nearly 45 experimental plots were harvested in the three Central Valley districts, using a crew of three men. These three men harvested, weighed, sampled and loaded a total of over four thousand individual test rows of sugar beets.

ACKNOWLEDGEMENTS

The Agricultural Research Staff is greatly indebted to the Agricultural Engineering Staff, and especially to Glenn Hubbard, foreman of the Woodland Agricultural yard, and to Clarence Myers, welder, for the very practical devices which they have designed and constructed for the mechanization of experimental plot harvest.

The Research Staff's greatest debt, however, is to the many Spreckels growers who provide the land and services which made possible the entire field testing portion of the Spreckels Agricultural Research program.

STEPS IN MECHANIZED PLOT HARVEST

22

Fig. 1.—Beets from 60 feet of row are topped, dug and loaded into a weighing basket suspended within the harvester tank.

Fig. 2.—A 25 lb. sample pan is filled.

23

Fig. 3.—The sample is bagged and identified.

Fig. 4.—Beets from 60 ft. of row are weighed.

24

Fig. 5.—The weight and identity are recorded.

25

Fig. 6.—When enough 60-foot test strips have been harvested to fill the tank, the Spreckels truck is loaded for delivery to the nearest receiving station.

THE QUEST FOR CLEAN BEETS

By AUSTIN ARMER
Agricultural Engineer
Spreckels Sugar Company

EDITOR'S NOTE—This is one of a series of articles dealing with the many factors contributing to the delivery of clean beets, *ready for processing*, to the sugar factory. This is part 5—it tells of recent developments by growers and harvester manufacturers.

EVER SINCE this writer delivered to Spreckels' Woodland Factory its first truck load of machine-harvested sugar beets in 1941, dirt and trash have been an unwelcome portion of nearly every load of beets harvested by machine.

Spreckels Sugar Company has devoted an almost uninterrupted program of investigations on dirt and trash reduction since 1946, when the consequences of machine harvesting loomed up as a deterrent to satisfactory mill operation. Most of these early efforts were concentrated on removal of foreign matter at the receiving stations, since harvester manufacturers had other worries than delivering perfectly cleaned beets. Early harvester manufacturerers were not unmindful of the dirt problem; the International HM1 and John Deere 100 (and 200) harvesters had provision for hand separating beets from clods, but these machines were not popular because of the added labor of beet cleaning.

This development program has led to constant improvement in receiving station beet cleaning facilities, and the nip roll screens now in use at most Spreckels receiving stations can do a fairly good job of cleaning up dirty loads of beets, and an almost perfect job when the beet loads arrive from the fields with reasonable (under 10%) amounts of foreign matter.

But the place for soil and foliage is in the beet field — not at the receiving station. That is why the pages of this bulletin have so often made a plea for clean beets at the receiving station, with soil, weeds, tops and crowns left in the field.

It is noteworthy that the first response from these pleas came, not from harvester manufacturers, but from growers. In 1950 Neff Brothers of Arvin cut and windrowed watergrass as part of the operation of their 2-row Marbeet harvester. The same year, Manuel Gularte of Soledad made an improved disk topper from his 2-row Marbeet. Rob Farnsworth of Grimes improved the 2-row Marbeet plow to reduce dirt delivery. Nick Capitanich of Watsonville (1954) and Buck Renfro of Gonzales (1959) improved the dirt removing capabilities of the 2-row Marbeet filter rolls.

In 1962 Ed Lagorio of Manteca completely rebuilt an early Farmhand lifter loader, converting it from one of the worst offenders as a "dirt harvester" to a machine delivering remarkably clean beets.

Shortly afterward, the vicinity of Manteca became a hotbed of home-grown harvesters. Alex Krier, a veteran of the Scott Viner sugar beet harvester venture in the 40's worked with Spreckels growers Bill Burgess, Henry Baumgartner and Dino Arnaudo.

Krier's shop at Salida (Krier Engineering and Sales) supplied the helical rolls which were used by these three growers — Bill Burgess built a complete 2-row lifter loader on a Minneapolis-Moline tractor. Henry Baumgartner and Dino Arnaudo installed helical rolls on International lifter-loaders. With each of these machines, beets were delivered with remarkable freedom from dirt or trash, despite the fact that the fields were black adobe, liberally strewn with chunky water grass roots. So successful were these modified lifter-loaders, that Krier Engineering and Sales is now building and selling substantial numbers of direct loading harvesters.

In 1961, Marion Sanchez of Rio Vista, California installed a set of four axial flow helical rolls on his Farmhand 2-row cart-type harvester, and this yielded an import reduction in the amount of dirt delivered. (While this screen is substantially similar to the early Armer screens used at the Woodland factory in 1946 and 1947, Mr. Sanchez probably never saw these screens, and deserves full credit for his design).

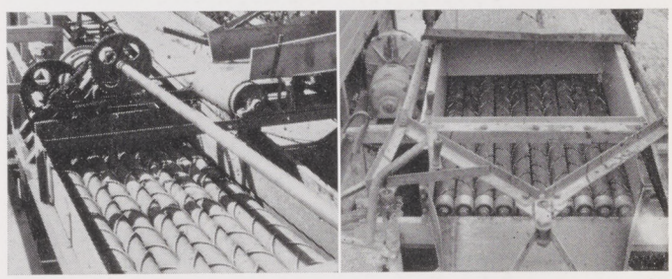
Also in 1962, a Montana beet grower, Donald W. Bernhardt of Billings installed on his International HM1 beet harvester a screen which duplicated the details of the Grab Roll screen (U.S. Patent 2,976,-500, Harold F. Silver et.al.). A number of such screens have been built by Silver Engineering Works Inc. for installation on existing cart-type harvesters.

MANUFACTURERS ENTER THE PICTURE

Gemco was the first factory-built harvester to be offered with an optional high-performance dirt screen. Gemco used the multiple transverse square roll type of screen (Armer patent No. 2,977,086), and it was available in 1962.

In 1963 both Gemco and Farmhand offered axial flow helical roll screens very similar to the one designed by Marion Sanchez. The 1964 Gemco tank type harvester was offered with a dirt belt instead of a scroll auger to remove screening, and alternate helical rolls of squirrel cage construction. The 1964 Gemco Direct Loading Lifter (available for either 2 or 3 rows) combines Rienks rolls with a similar axial-flow niproll screen.

A number of John Deere 223 beet harvesters sold



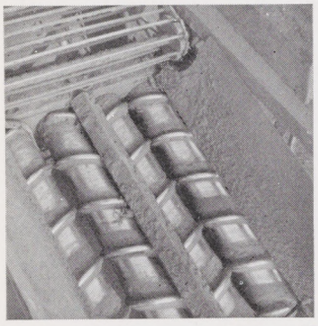
26

LEFT—Armer screen built in 1946.
RIGHT—Another screen of this type cleaned 35,000 tons of beets in November, 1947, when used experimentally on a piler at Woodland

in the Woodland area have been equipped with helical roll screens built by Kimzey Welding Works. It is probable that a similar screen will be available as a factory-built option in 1965; pilot models are now in the field.

THESE GROWER-BUILT CLEANING ROLLS ALL DELIVERED CLEAN BEETS FROM MUDDY, CLODDY AND/OR WEEDY FIELDS.

THESE FACTORY-BUILT CLEANING ROLLS DELIVER CLEAN BEETS, REDUCE GROWER'S HAULING COSTS AND GREATLY IMPROVE FACTORY EFFICIENCY.



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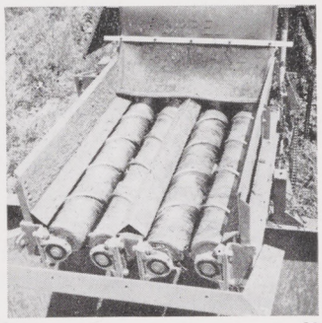
MARION SANCHEZ — 1961



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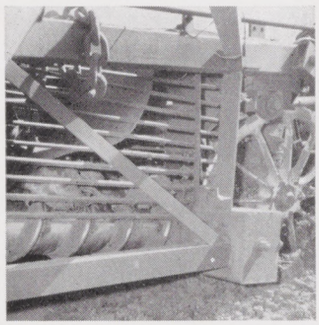
FARMHAND

29

ED LAGORIO — 1962



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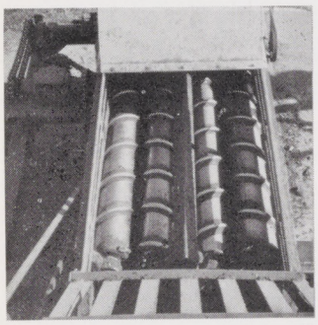
KRIER



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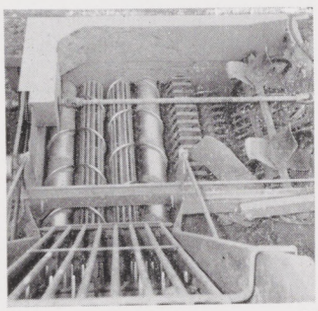
BILL SOUSA — 1962



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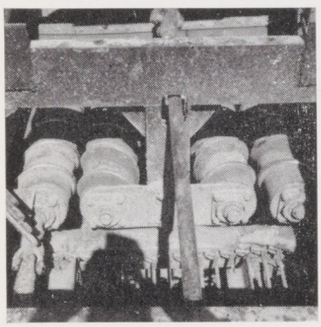
GEMCO



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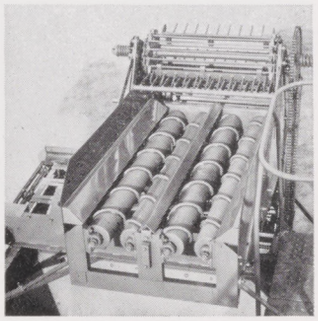
HENRY BAUMGARTNER — 1963



California Rancher Photo

34

KIMZEY (on J.D. 223)

MEADOW MOUSE CONTROL

BY MAYNARD W. CUMMINGS*

35

HIGH POPULATIONS of meadow mice exist in many areas of the state this year. Orchard trees in the Sacramento Valley were damaged by girdling and recently there has been severe damage in alfalfa and pastures and some *sugar beet crops.*

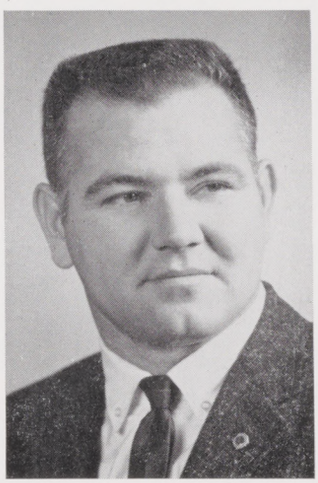
The need to closely inspect forage crops, orchards and over-wintering sugar beets cannot be overemphasized. If mouse populations are detected and treated before they reach epidemic proportions, much economic loss can be avoided. Preventive control of mice on adjacent uncultivated lands is good insurance against crop damage, as the mice locally migrate in search of food and cover.

Control by use of endrin and other chemicals is *not* recommended. Standard baits available from County Agricultural Commissioners are oat groats or rolled barley (the first is preferred) treated with 1% or 2% zinc phosphide. In spot baiting by hand 1% is effective bait. The 2% formula is often used when bait is broadcast, but recommendation of the local agricultural commissioner should be followed. Bait is applied at 5-10 pounds per acre.

* Extension Wildlife Management Specialist, UC, Davis.
Reprinted from "Sugar Beet Notes"—January 10, 1964
Agricultural Extension Service

Notes from Our Field Men

J. N. HILL, Sucro-Elmira



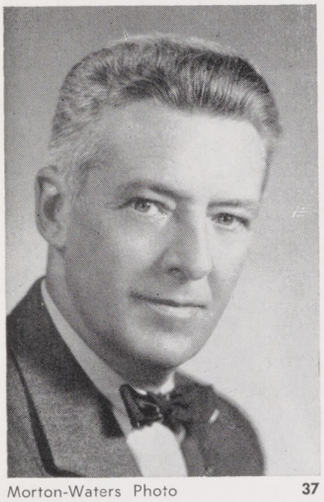
35

Previously, I have found little meadow-mouse damage other than a beet here and there within a field. Now, a few of my growers are beginning to find spots where the mice are beginning to concentrate and do some damage. I have two growers who feel that they should apply some control before the population becomes

Continued on Page 16

SPRECKELS INTRODUCES AN EXCITING NEW KIND OF CONSUMER SUGAR

A MESSAGE TO SPRECKELS GROWERS:



Morton-Waters Photo 37

Because of your close association with the Spreckels Sugar Company, I am sure you will read with interest the following article introducing you to Spreckels' BROWNULATED, the new kind of brown sugar that pours and stores like granulated sugar.

Those of us responsible for selling Spreckels Sugar are tremendously excited about this new sugar. In BROWNULATED we have a much needed consumer product that cannot be offered or duplicated by any competing brand. Its inclusion in the fine line of Spreckels grocery products will give grocers added incentive to carry the complete line of Spreckels sugars.

As a grower for the Spreckels Sugar Company, and as a booster of Spreckels Sugar products, you will, I am sure, tell others in your family and your friends about this exciting new product. If your favorite grocery store does not have Spreckels BROWNULATED on display, ask the store manager to order some for you immediately. I am certain he will be happy to do so.

W. H. OTTEY,
Vice President, Spreckels Sugar Company

38

SPRECKELS SUGAR COMPANY has marketed a revolutionary new free-flowing brown sugar.

Spreckels BROWNULATED—the most exciting grocery product development in this company's history—becomes available to Northern California consumers the week of May 11th.

BROWNULATED, as the name implies, is a granulated brown sugar. Viewed from any angle, it is exactly what consumers have needed. It is a brown sugar that pours, sprinkles and measures as easily as granulated. It won't lump or get hard. It is as much at home in a sugar bowl as it is on the pantry shelf.

Exhaustive tests by home economists have shown BROWNULATED brown sugar to be perfect as a basic ingredient for baking such things as cookies, pies, cakes and pastries. Among the many fine attributes these home economists discovered about BROWNULATED was the fact that it is the only brown sugar that blends with dry ingredients easily. It is also the easiest of all brown sugars to measure —no packing into measuring cups is required.

In addition to its many and varied uses in recipes, Spreckels BROWNULATED is the first and only brown sugar planned for sugar bowl use. It is excellent for sprinkling on hot and cold cereals, for topping buttered toast, french toast, hot cakes and waffles and for topping fruit desserts and pies. It has literally hundreds of other uses directly from the sugar bowl.

TECHNOLOGICAL TRIUMPH

Changing the physical nature of sugar, which is the accomplishment that makes Spreckels BROWNULATED possible, represents a major advance in sugar manufacturing technology. Standard brown sugar gets its appealing flavor and its physical characteristic of moistness from a thin layer of molasses surrounding each sugar crystal. Production of BROWNULATED involves a process which removes the moisture while retaining the very appealing brown sugar flavor.

The end result is a brand new basic ingredient — a free-flowing brown sugar — with a flavor level between light and dark brown sugars.

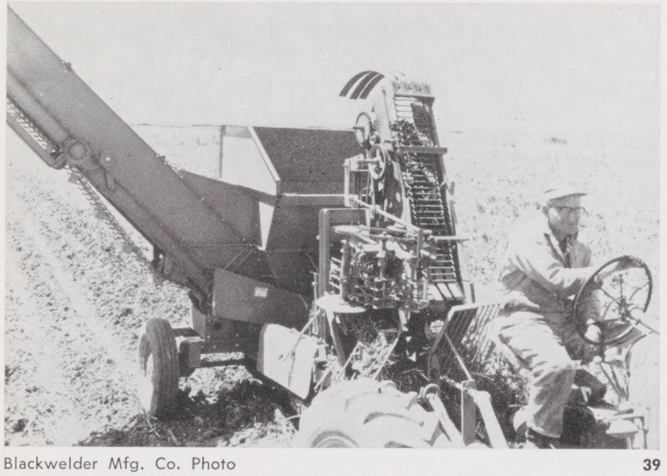
Spreckels BROWNULATED is packed in distinctively-colored, one pound-four ounce boxes complete with convenient pouring spout. Since BROWNULATED is bulkier than moist brown sugars, slight adjustments are necessary in recipes that call for standard brown sugar. A convenient substitution table has been reproduced on the side of each BROWNULATED package to serve the homemaker's needs in this respect.

MARKETING

Spreckels Sugar Company's introduction of BROWNULATED involves one of the most extensive advertising and promotional campaigns ever conducted by the company. Direct consumer ads

Continued on Page 16

SUGAR BEET HARVESTERS, LIFTER-LOADERS AND TOPPERS FOR 1964

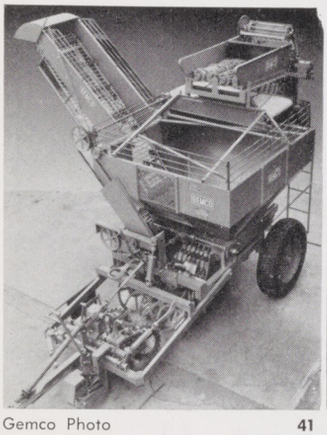


Blackwelder Mfg. Co. Photo 39

MARBEET, MODEL G, is a pull-type single row harvester.
In one trip of a wheel tractor, it delivers topped, cleaned beets to the cart, which has a 1½ ton capacity.

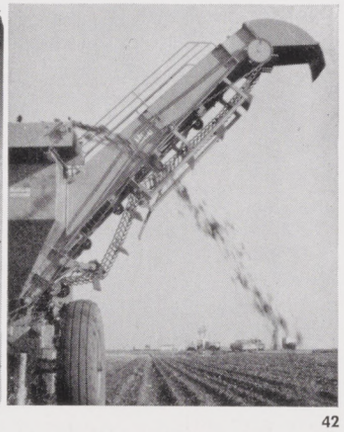
Alex Krier Photo 40

KRIER ENGINEERING AND SALES OF Salida are now in production with this simple 2-row lifter-loader. Axial-flow cleaning rolls transfer beets from squeeze-wheel lifter to loading conveyor..



Gemco Photo 41

LEFT—Shop view of the 1964 GEMCO tank-type harvester with nip-roll cleaning screen.

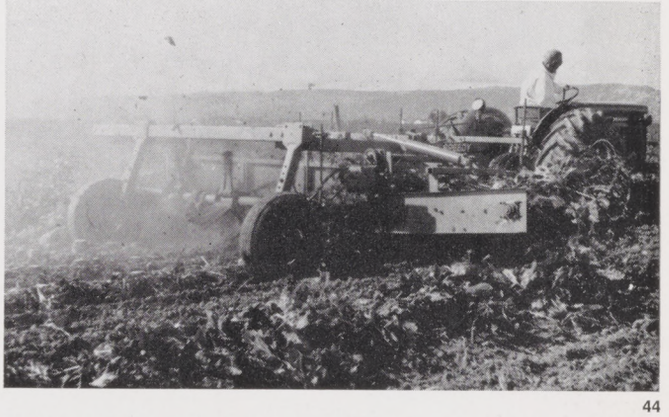


42

RIGHT—Cleaning rolls and dirt belt discharge a steady, heavy stream of dirt and trash.

43

GEMCO has re-entered the field of direct-loading lifters with this 2-Row machine. A 3-Row model is also available for 6-Row plantings.



44

SPEEDY TOPPER removes foliage and crowns from 4 rows; deposits them into windrow or (with optional elevator) direct to truck. Flails at rear leave beets exceptionally clean.

45

WESCON TOPPER delivers 2- row top windrow on first pass.
On second pass, extension conveyor completes 4-row top windrow.

NOTES FROM OUR FIELD MEN

Continued from Page 13

too great. I have recommended that they use barley treated with 1 to 2% zinc phosphide.

As yet, meadow mice do not appear to be much of a problem, but I keep telling my growers to keep a careful check on their fields.

W. W. PORTER, Swingle-Libfarm

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Meadow mice have made their presence felt in a field east of Dixon recently. The infestation hasn't yet reached the stage of extreme damage such as happened two years ago near Davis, but the danger is there.

Strangely enough the field in question is far from any creek bottom and is surrounded by pasture and field crops. Two years ago the badly infested fields all lay adjacent to Putah Creek which served as a natural habitat for the mice. Perhaps since no creek bed is near, the pasture is the source of the rodents.

BROWNULATED

Continued from Page 14

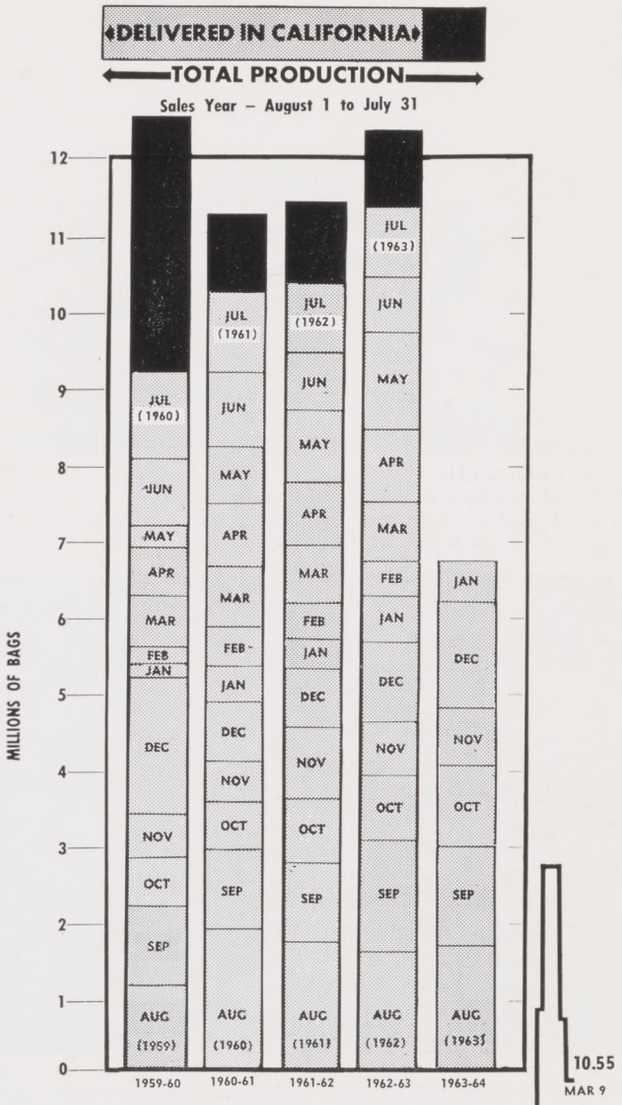
on television and in newspapers will tell the millions of prospective customers about this exciting new product.

Grocery store promotional material and other point-of-purchase material has also been prepared. Advertisements in grocery trade journals are being used to alert grocers to the new product and to the wide range of promotional activities being conducted by Spreckels.

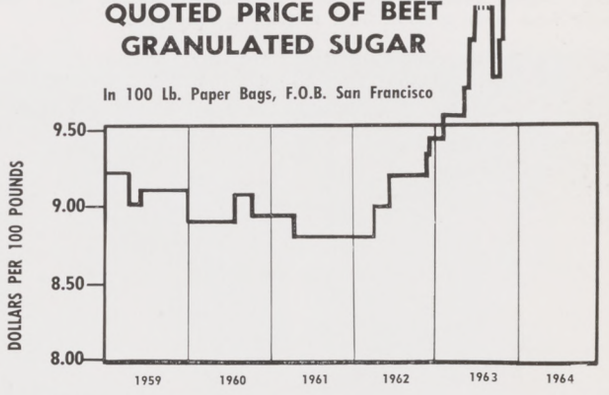
Recipes have been prepared taking the utmost advantage of the special attributes of BROWNULATED brown sugar. Specialists in sugar cookery have developed recipes for cookies, cakes, pastries and other foods which will give homemakers top results with a minimum of time and effort. These recipes are being made available to food editors for publication and to other selected home economists. Recipe folders are also being distributed in grocery stores and by mail to those who write the Spreckels Sugar Company requesting them.

BROWNULATED opens up a host of new uses for brown sugar, not only in recipes, but as a table sugar with irresistable appeal.

PRODUCTION AND DELIVERIES OF BEET SUGAR IN CALIFORNIA



QUOTED PRICE OF BEET GRANULATED SUGAR



47

The SPRECKELS SUGAR BEET BULLETIN is issued bi-monthly by the Agricultural Department of the Spreckels Sugar Company as a service to its growers.
Mention of specific methods, devices and implements does not constitute an endorsement by the Company.
All photographs by the editor unless otherwise indicated.

AUSTIN ARMER, EDITOR — SPRECKELS SUGAR COMPANY — WOODLAND, CALIFORNIA

SPC - DAVIS

PUBLISHED FOR CALIFORNIA SUGAR BEET GROWERS BY THE SPRECKELS SUGAR COMPANY

SPRECKELS SUGAR BEET BULLETIN

VOL. 28 MAY-JUNE, 1964 NO. 3

48

CONGRATULATIONS

are due a record number of Spreckels growers

THE 1963 HONOR ROLL

is recognition of the achievement of growers who contributed to the largest sugar production of any year in Spreckels history.

ARIZONA FACTORY SITE SELECTED

By GUY D. MANUEL, *President*
Spreckels Sugar Company

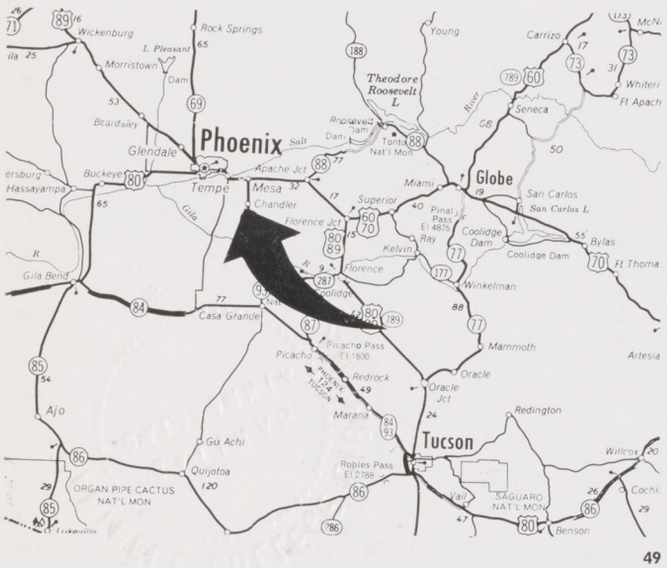
A DECISION has been reached regarding the location of the beet sugar factory to be built in Arizona. After carefully considering all of the factors involved, it has been determined that the optimum location is in Maricopa County.

The factory will be constructed on a 650 acre site adjacent to Arizona State Highway 87-93, some twenty-one miles southeast of Phoenix and five miles south of the town of Chandler. Final purchase of this site is subject to obtaining proper zoning classification of the property.

As presently contemplated, the new factory will be financed by bonds issued by the Industrial Development Corporation and sold by an investment banking firm to private investors. These bonds will be backed by the credit of the Sugar Company and will be repaid from the rental payments derived from a long-term lease of the new facility to the Spreckels Sugar Company. Under this arrangement the factory will, of course, be subject to all state and local property and school taxes.

We propose to undertake immediately the engineering studies and other preparations that will precede the actual construction of the factory at the South Chandler site. Offices have been established in Tempe (in the Apache Plaza), and the planning and administration of the construction phase will be conducted from there under the direction of Fred H. Ballou, Jr., vice president of the Company.

Our present timetable calls for the factory to be completed in the spring of 1967 in time to process sugar beets planted in the fall of 1966. The plant will incorporate the latest technological advances in the sugar industry.



ARROW INDICATES location of Spreckels Factory 5 — five miles south of Chandler; 21 miles southeast of Phoenix.

COMMENTS ON A RECORD HARVEST

By DR. RUSSELL T. JOHNSON
Vice President, Spreckels Sugar Company

WITH THE 1963 crop harvest operation completed, it may be timely to comment briefly on this record crop of sugar beets.

In general, the 1963 crop produced very well, averaging 22 tons per acre. This yield exceeds that of all previous years except 1959, when our growers produced over 25 tons per acre on the average. The average sucrose content is slightly below that of last year but exceeds all other recent years' averages back to 1959 when growers produced a crop with over 15% sugar.

Far more tonnage than ever before was processed by our factories, over a million tons more than the largest previous crop.

Despite the extremely large tonnage processed and the unfavorable fall harvest weather, the termination of the spring operating period would have to be considered timely, since all beets were out of the ground by May 15. The dry spring enabled growers to perform the seemingly impossible task of harvesting a record 1,180,000 tons after January first, and cool temperatures kept bolting problems to a minimum. Sucrose content of spring beets was excellent, and represented a substantial improvement over that experienced during the fall period. In many instances overwintered beets also displayed a marked improvement in growth.

It is not intended to imply that the 1963 crop was harvested in the absence of any problems. Farmers are familiar with the problems associated with the operation of a new piece of equipment, and thus can understand the myriad difficulties encountered with the start-up of the new Mendota factory. While the overall performance improved materially during the season, the average performance left much to be desired and some additional fall harvest could have been accomplished had this factory operated to capacity. Some of the delays resulting from the Mendota factory operations were overcome by incurring excessive freight costs to transport beets to other factories for processing, and by operating at least one factory during every month between the start of harvest in July of 1963 and the termination of harvest in mid-May 1964. During this eleven-month period beets could be received and processed at some place at all times. Although there were periods when we could not accommodate the volume desired, we were never in the position of being unable to process at all.

Had it not been for the large acreage of extremely late season plantings there is little doubt that yields would have exceeded 22 tons per acre. Our field staff and research staff compiled enough information on late spring plantings to confirm our belief that June plantings are hazardous. For the conditions experienced in 1963, plantings after June 10 did not make enough growth to produce an economi-

Continued on page 24

The 1963 Honor Roll

We proudly present the growers whose 1963 crops exceeded 25 tons per acre in Districts 2, 3 and 4. Since the District 1 **average** yield exceeded 25 tons per acre, we comply with past policy and list only those growers whose contracts yielded more than 30 tons per acre in District 1.

This impressive list gives credit to growers for Spreckels Sugar Company who helped to achieve **for every one of the four districts** beet tonnage and sugar per acre, both of which exceeded the previous 5-year average.

DISTRICT 1 — SPRECKELS

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
Dean E. Pryor	31	44.64	12,562
James M. Johnson	47	43.43	13,385
L & J Farms	10	42.47	11,441
Tognetti & Fillippelli	53	42.31	12,498
John De Carli & Son	19	41.40	13,604
Franscioni and Griva, Inc.	20	41.39	12,516
Steve Pervetich	11	41.08	12,135
Toney Medina Jr.	12	41.04	12,484
Jim Fanoe and Son	28	40.96	12,693
Joseph B. Silva	21	40.96	11,469
West Coast Farms	22	39.53	10,989
California Coastal Farms, Inc.	162	39.34	11,558
A. J. Glau and Son	15	39.28	11,415
Albert C. Hansen, Jr.	30	39.26	11,401
West Coast Farms	30	39.12	11,212
Edward Martin	10	39.02	11,862
Breschini Company	34	38.80	11,361
Elmer Johnsen	55	38.64	11,824
J. J. Crosetti	101	38.42	11,680
Harry Semas	42	38.15	11,903
Peter A. Stolich Co.	43	37.79	11,246
Howard Handley	70	37.59	10,202
Peter A. Stolich Co.	48	37.52	10,596
B & M Farms	29	37.21	9,833
W. M. Sullivan	42	37.14	10,243
United Farms Co.	48	37.00	10,575
Obata Brothers	33	36.92	10,286
West Coast Farms	13	36.83	11,601
Harden Farms of California	175	36.81	10,491
C. L. & A. W. Johnson	45	36.77	10,752
Sgheiza Brothers	19	36.76	11,072
Gill Brothers	29	36.64	10,289
Pete Banovac	10	36.63	9,575
R. G. Wood	37	36.62	10,942
Toro Farms	40	36.56	11,750
Paul W. Bertuccio	19	36.53	10,053
West Coast Farms	34	36.52	10,905
Turri Brothers	33	36.40	10,854
Toro Farms	110	36.40	10,214
Albert C. Hansen, Jr.	88	36.23	10,528
Wm. D. Crinklaw	94	36.17	9,932
Fremont Farms	40	36.12	10,785
Baggiolini Brothers	31	36.06	9,224
Jim Fanoe and Son	133	35.93	10,333
Robert A. Smith	20	35.84	11,046
John Oreggia & Co.	10	35.60	11,171
Manuel Cunha	46	35.42	11,115
B. E. Johnson	24	35.24	11,178
Schween Brothers	35	35.23	11,689
A. Poloni and Son	12	35.13	10,609
Albert C. Hansen, Jr.	27	35.06	9,200
Botelho Brothers	22	34.95	10,751
Silveria Brothers	16	34.80	10,002
Schween Brothers	94	34.63	10,832
C & V Farms	10	34.44	9,623
Mortensen Brothers	63	34.36	11,353
Mission Valley Dairy	17	34.22	8,719
H. F. Trafton & Son	19	34.19	10,120
United Farms Co.	63	34.11	10,253
Bengard & Sconberg	52	34.07	10,051
J. M. Thorne	30	34.00	8,752
Obata Brothers	42	33.95	10,850
Silvio Vanoli	22	33.91	9,291
Bruce Church Inc.	165	33.90	9,729
Norman Bundgard	51	33.82	10,261
Donald F. Davies	21	33.69	10,296
Harless Brothers	20	33.68	9,862
Martella & Buzzini	30	33.52	9,560
California Orchard Co.	71	33.37	10,718
Hansen and Fowler	41	33.35	10,439
Luis Scattini	12	33.35	9,018
E. John Nielsen Co.	15	33.06	10,751
Rincon Farms	13	33.01	9,896
Ernest J. Homen	17	33.00	10,171
Ruth Wing	99	32.98	11,108
Edward Pollard	30	32.96	9,710
Calcagno Farms	48	32.94	10,323
Bellone & Del Chiaro	37	32.89	10,005
Carl M. Mortensen	13	32.89	9,643
Ted Salmina	30	32.80	10,437
Jack A. Hayes	21	32.76	8,649
Edward A. Johnsen	8	32.73	10,349
Joseph Gubser, Sr.	25	32.63	10,292
Valdemar Schmidt	45	32.59	10,566
Fabretti and Dedini	38	32.59	7,489
Ernest R. Binsacca	35	32.51	10,306
C & V Farms	10	32.44	7,838
Albert C. Hansen, Jr.	35	32.39	9,957
Pete Fanucchi	100	32.38	10,109
Yamanishi Farms	19	32.27	8,197
Aden B. Andersen	100	32.25	9,501
Wm. D. Crinlkaw	156	32.21	7,299
F. Vosti and Sons	30	32.16	7,879
John D. Domingos	16	32.08	9,720
Wm. D. Crinklaw	38	32.00	6,291
Leo & Robert Mayer	57	31.85	8,396
Raymond Martin	355	31.84	9,406
E. John Nielsen Company	77	31.80	10,233
G. W. Herbert & Son	53	31.72	10,296
Albert C. Hansen Jr.	30	31.69	8,398
John O. Anderson	45	31.58	9,885
Frank Taylor	121	31.47	9,498
Ferry-Morse Seed Co.	91	31.43	8,888
Frank M. Birbeck	60	31.35	9,606
Lee F. Smith	17	31.29	8,755
Herald Ranches	34	31.09	9,999
Chas. Gianolini	29	31.07	9,222
Albert C. Hansen Jr.	120	31.03	9,321
Calcagno Farms	44	30.99	8,826
William J. Soares	24	30.96	8,811
Robert Thorp	9	30.91	10,819
Paul W. Bertuccio	36	30.84	8,160
Chas. Morgantini and Son	10	30.79	8,473
Growers Produce Dispatch	46	30.78	9,283
Latasa Brothers	66	30.77	10,283
Tognetti Brothers	36	30.76	9,419
Dean E. Pryor	53	30.76	8,656
Elwood Fontes	27	30.73	8,125
Dean E. Pryor	89	30.66	8,523
Dean E. Pryor	52	30.63	8,938
H. E. Widemann	46	30.60	8,733
L. C. H. Company	25	30.56	9,131
Jack A. Hayes	26	30.53	8,213
West Coast Farms	90	30.53	7,443
Pete Vojvoda	16	30.52	7,606
Stephen Papini	14	30.33	8,498
Burk Farm Company	41	30.32	8,296
Admiral Packing Co.	117	30.13	8,081
A. Frew	68	30.03	9,958
Wm. D. Crinklaw	303	30.00	8,463
Wm. A. Hart	21	30.00	7,078

DISTRICT 2 — MANTECA

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
James B. Rodgers	50	36.89	9,333
Lauri Filippini	63	35.61	9,494
Frank Raspo	49	34.95	9,122
Calcagno Farms	75	32.84	8,341
Theodore R. Baskette	98	32.09	9,556
Albert Fonseca	28	31.91	9,388
Louis W. Pelucca	31	31.91	9,867
Joe Garsino	39	31.79	9,353
Tony A. Sanchez	33	31.66	9,245
Edward Maberto	76	31.62	10,030
San Julian Bros & Zabalza	164	31.54	9,260
Lauri Filippini	34	31.48	9,878
Christ Bacchetti & Son	37	31.47	8,963
Enrico Pizzi	6	31.30	11,018
A. & Emil Croce	11	31.30	9,784
Frank Fialho	37	31.30	8,902
James J. Stevinson	100	31.23	7,832
H. Ehlers and Sons	160	30.68	8,695
Dale Lawrence	19	30.68	10,161
Robert Norman	22	30.65	8,723
George F. and Charles O. Hansen	43	30.42	9,181
Raymond Owning	99	30.35	9,906
Louis W. Pelucca	30	30.27	8,373
Aldo Navone	23	29.96	8,880
Geo. H. Clever	68	29.87	9,170
Calcagno Farms	79	29.83	7,487
H. Arata	21	29.81	8,257
H. Ehlers and Sons	150	29.74	8,821
Frank Fialho	36	29.62	8,495
Grant and Wilson	79	29.53	9,267
Tanaka Farms	113	29.53	9,166
Maciel Brothers	89	29.51	7,797
Garry Fisk	5	29.39	8,165
Alvarez Brothers	120	29.38	8,550
R. E. Thorsen	74	29.37	8,253
Caminata and Podesta	76	29.28	8,755
Murata Brothers	38	29.23	7,658
Tony J. Pereira	72	29.16	8,276
Grant and Wilson	45	29.13	8,092
Joseph Widmer, Jr.	73	28.67	7,540
R. E. Thorsen	70	28.54	7,729
Tony A. Sanchez	72	28.42	8,833
James J. Stevinson	69	28.39	7,705
Manuel Neves, Jr.	60	28.38	9,399
Fred Fukano	110	28.37	7,524
Kaiser and Lindeman	131	28.27	8,628
Hengst Farms, Inc.	95	28.22	7,614
Lara Farms, Inc.	91	28.07	9,218
Ishida Brothers	105	27.96	6,873
Lara Farms, Inc.	89	27.89	9,165
Westing and Son	94	27.89	9,120
Fumio Nishida	80	27.76	8,656
Hanson and Barkley	46	27.66	7,806
Lovegreen and Wilson	76	27.59	7,753
K. Sasaki	22	27.51	7,593

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
Harlan E. Neer	90	27.33	8,423
Ben Fujii	35	27.31	8,422
Maciel Brothers	66	27.22	7,807
Grant and Wilson	144	27.20	7,496
Bogetti Brothers	59	27.18	7,415
Jory Brothers	138	27.09	8,620
Hanson and Barkley	77	27.03	7,257
Calcagno Farms	149	27.07	7,358
George F. and Charles C. Hansen	22	26.88	8,166
Merlin Miller	40	26.84	9,040
Clarence A. Nilsson	68	26.78	8,762
Robert Norman	149	26.68	8,922
Joe Toste Jr.	69	26.67	7,516
H. M. Hunt and Son	50	26.61	7,813
Albert Fonseca	31	26.60	8,565
M. C. Thorkelson & Co.	37	26.56	7,851
Kiyoi Brothers	170	26.47	7,449
Bertram F. Maurer	195	26.46	6,631
Franscella Brothers	72	26.43	6,645
Dixon and Ferreira	31	26.41	7,426
John Narducci	145	26.39	8,603
D. and A. Togninali	135	26.36	8,319
Albert Fonseca	78	26.35	8,348
A. Pellegri and Son	51	26.24	6,712
Dondero Brothers	52	26.09	8,375
Sousa Brothers	40	26.07	8,129
Thomas S. Alderson	68	26.06	6,572
Enos and Woodward	40	26.00	8,325
Grant and Wilson	109	25.92	7,641
Enos and Woodward	54	25.89	7,363
Maciel Brothers	152	25.87	6,933
Ralph Panella	40	25.86	7,582
Ishida Brothers	37	25.77	7,138
T. C. Daily, Jr.	24	25.72	6,595
Russell Reece	60	25.70	6,826
Giannecchini Brothers	63	25.63	7,868
Manuel R. Costa	50	25.59	8,025
Clarence A. Nilsson	75	25.58	8,503
Johnny A. Dasso	17	25.56	7,642
Melvin Baumbach	125	25.55	7,742
J. & R. Bogetti	170	25.55	7,047
Robert L. Bordenave	10	25.37	8,469
William F. Garden	72	25.26	8,366
Stuart R. Clever	36	25.22	7,662
Allister Allen	23	25.12	6,205
Tony J. Pereira	38	25.12	7,456
Davis Vana	20	25.11	8,191
Perry Farms	113	25.09	7,979
Theodore R. Baskette	45	25.03	6,753
Robertson and Sons	75	24.94	7,427
Edward Maberto	77	24.93	8,287

DISTRICT 3 — WOODLAND

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
Arnold Collier	117	32.02	8,966
Joe Heidrick, Jr.	37	29.55	8,550
Dan G. Best II	29	31.70	8,077
William R. Lider	19	30.57	8,223
Robert C. Schulze	112	30.24	8,643
M. Martinez	67	30.21	9,238
Robert C. Schulze	89	30.14	8,952
Robert Leslie Button	67	30.08	8,013
Paul W. Reiff & Sons	140	29.96	8,551
Floyd E. Warner	84	29.76	7,750
Manuel Bastiao	39	29.69	6,609
Sagara Brothers	76	29.64	8,975
Harlan and Dumars	20	29.19	7,893
Schneider, Fricke, & Schneider	34	29.08	7,590
Schneider, Fricke, & Schneider	30	28.69	7,092
Roth Brothers	15	28.60	8,397
Roger D. Moore	50	28.58	7,968
Orth Brothers	56	28.32	7,120
Rosalird G. Criste	67	28.27	8,029
Hamatani Brothers	117	28.20	7,371
Warren Sievers	19	28.11	7,803
Robert C. Schulze	76	28.10	8,323
Meek and LeMaitre	164	27.99	7,165
Meek and LeMaitre	30	27.81	8,465
Oji Brothers Farms	93	27.75	7,748
Chew Brothers	90	27.71	7,077
Harry Gimenez	25	27.63	5,366
Joe Gnoss, Jr.	100	27.46	8,859
Nishikawa Brothers	75	27.45	7,159
Schoeningh Farms	88	27.31	7,264
E. M. Ullrich	27	27.23	7,842
Heidrick Brothers	231	27.18	8,882
Dela Torres Brothers	59	27.05	7,412
Alvin J. Hermle	22	27.02	7,803
Dela Torres Brothers	67	26.86	6,586
Dan G. Best	56	26.84	6,689
Harry Gimenez	89	26.83	7,952
Richard Moore	118	26.78	7,504
Dela Torres Brothers	42	26.74	6,172
James A. Walker and Son	130	26.67	7,948
Heidrick Brothers	114	26.65	8,347
Oji Brothers Farms	89	26.63	4,815
Orrick Farms, Inc.	43	26.61	6,982
Wetzel Brothers	23	26.55	6,558
R. R. Peters	140	26.41	7,928
Leroy Traynham & Son	20	26.33	7,162
John J. Vanetti	23	26.32	7,312
Van Smith	65	26.30	7,916
Nishikawa Brothers	78	26.29	7,445
Joseph W. Machado	167	26.27	6,667
Harvey L. Rominger	33	26.24	6,612
George M. Struve and Son	84	26.17	7,893
Roth Brothers	58	26.14	7,685

DEAN PRYOR—TOP GROWER IN DISTRICT 1

50

DEAN PRYOR was born fifty years ago in Bonsall, in San Diego County.

He attended the University of California at Davis, graduating in 1936 with highest honors. Presently he is farming 900 acres of land in the Gonzales area growing sugar beets, lettuce, tomatoes, beans, onions, and garlic.

Aside from his intensive farming program he finds time for many outside activities, chief of which are the following: President of District 7, California Beet Growers Association; member of the State Board of Directors of this Association and Chairman of the Research Committee; member of the Advisory Council, Division of Agricultural Sciences, University of California; and on the Advisory Committee of the Agronomy Department.

In accounting for this record crop, Dean gives credit to an unusually good season, an adequate fertilizer program, and no lack of moisture.

JAMES B. RODGERS—TOP GROWER IN DISTRICT 2

51

JAMES B. RODGERS, 33-year old De Pue Road farmer, was selected as Manteca's "Outstanding Farmer of the Year" by the Manteca Junior Chamber of Commerce. He farms 165 acres at Rt. 2, Box 137-M on De Pue Road, just off South Airport Way approximately 10 miles south of Manteca.

Mr. Rodgers leases the acreage, and has been farming at the site for the past 4½ years. He presently grows hay, milo and sugar beets.

He is a graduate of Sacramento High School, and later worked for the City of Manteca as a mechanic. After leaving this job, he worked on the ranch of Albert Fonseca for eight years, before leasing the property he presently farms.

Mr. Rodgers has remodeled the home on the property, in addition to constructing a repair shop for his equipment.

Mr. Rodgers' wife is the former Rosemarie Fonseca of Manteca, and they have 3 children.

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
Wm. E. Duncan	97	26.13	8,633
Wilson Lovvorn	71	26.12	8,014
Eldred R. Reel	143	26.09	7,378
Oji Brothers Farm	65	26.09	4,691
Jimmy Leong	76	26.02	8,087
Leroy Traynham & Son	120	26 01	6,898
Noboru Hitomi	56	25.99	5,988
A. H. Rominger & Son	80	25.98	8,386
C. Bruce Mace Ranch	200	25.96	4,709
Glenn E. Morris	107	25.94	7,834
James I. Tadlock	45	25.93	8,370
Wilson Lovvorn	94	25.90	7,350
Elwood M. Olson	68	25.89	5,561
Dela Torres Brothers	99	25.85	6,912
Wetzel Brothers	97	25.84	7,003
Heidrick Brothers	130	25.83	4,851
M & T Farms	30	25.77	8,597
Arnold Collier	76	25.68	7,257
E. M. Ullrich	33	25.67	7,516
Donald Fong	46	25.60	5,990
Newhall Land and Farming	91	25.55	6,479
Regents of Univ. of California	7	25.51	6,898
J. H. Braden	38	25.50	6,645
Dan G. Best	10	25.45	6,581
Eugene G. Cain	50	25.37	7,418
Heidrick Brothers	70	27.49	6,070
Schneider, Fricke, & Schneider	47	25.08	6,255
Marino Romani	99	24.99	6,972
Wetzel Brothers	43	24.97	7,052
Chas. P. Grimmer	43	24.96	7,693

DISTRICT 4 — MENDOTA

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
Markarian Farms	37	50.99	11,299
A & D Koligian	41	48.56	11,412
John Bertao	17	47.97	10,170
Kenneth Peelman	27	46.49	10,869
Edward Wagenleitner	75	45.97	11,529
Taveres and Teore	102	45.75	10,641
Eugene Nord	35	44.14	11,026
J. C. Freeman	28	42.65	12,215
Leo Lanini	18	42.29	11,038
Janet P. Johnson	37	42.28	8,921
Dillon Brothers	32	41.65	9,821
Lionel Caeton	12	41.55	9,748
C. F. Andresen	37	41.28	10,535
Davis Brothers	18	41.15	9,827
Earl Royer	54	40.76	9,041
C. L. Erickson	100	40.03	10,384
Hugh S. Jewett	13	39.94	10,624
Clarklind Farms	55	39.84	9,625
John Teixeira	28	39.60	9,203
Vincent Kovacevich	86	39.50	8,674
Vincent Kovacevich	41	39.42	9,366
John J. Cardoza	26	39.00	9,399
Julia E. De Campos	42	38.97	7,654
Vincent Kovacevich	47	38.84	9,764
Albert J. Perry	41	38.77	11,693
Richard Hohlbauch	33	38.51	8,765
Costa Brothers	62	38.49	9,522
Kenneth Peelman	74	38.42	9,836
Harold D. Weis	17	38.38	9,649
Paul W. Demkey	38	38.17	10,993
Leo Wagenleitner	14	38.11	9,901
Markarian Farms	38	38.05	10,327
Newhall Land and Farming Co.	115	37.85	9,599
Hugh Bennett	54	37.84	8,499
Graydon C. Nichols	151	37.75	8,159
Giusti Farms, Inc.	150	37.73	9,553
Duane Soares	42	37.69	9,573
Dutra Brothers	38	37.68	8,584
L. F. Atkins	18	37.54	10,113
Herluf B. Fries	34	37.45	9,415
Jess Allen	37	37.22	10,012
Edward Wagenleitner	33	36.99	8,604
Dale White	29	36.97	9,642
Floyd Hudiburg	102	36.86	9,856
Dick Anderson	37	36.77	8,692
Leonard Frazier	85	36.67	9,637
W. A. Klepper	210	36.58	9,079
Newhall Land and Farming Co.	86	36.58	8,143
N. L. Ritchey	74	36.44	10,014
S. C. Pinheiro	38	36.36	9,803
Vincent Kovacevich	226	36.33	9,489
Joe Craveiro	71	36.28	9,730
A. F. Mendes & Sons	65	36.12	9,449
Wm. Erickson	100	35.81	9,504
Van Erickson	100	35.79	9,105
Pomeroy and Jewett	35	35.74	10,844
Irwin R. Efird	37	35.74	9,678
Costerisan Farms	30	35.68	8,692
C. E. & R. B. Klepper	28	35.63	8,523
Vincent Kovacevich	36	35.51	9,545
Costerisan Farms	54	35.43	9,630
Lee Herring	47	35.43	9,439
David Noel	20	35.18	6,923
Dillon Brothers	27	35.16	8,101
Giusti Farms, Inc.	265	35.11	9,241
Gary E. Waller	58	35.10	8,333
Fred Elder	36	35.02	9,000
L. F. Atkins	15	34.97	8,917
Laura Jones	2	34.88	7,946
Margaret Michels	39	34.81	9,531
C. Paul Johnson	36	34.72	7,368
Frank Heuer	37	34.69	9,623
Eugene Hayes	14	34.64	10,212
Giusti Farms, Inc.	69	34.64	9,450

ARNOLD COLLIER—TOP GROWER IN DISTRICT 3

52

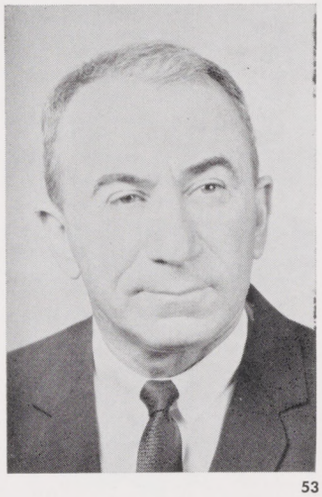
THIS IS THE sixth year in which Arnold Collier has grown better than a 25 ton crop.

Beginning his farming venture with 160 acres, he has expanded his operations to 3,600 acres. He has emphasized mechanization, and developed the "Collier Sled" for multi-purpose use in 1957.

Since irrigation is the backbone of high yields in all crops in general and sugar beets in particular, he has a total installed horsepower of 1800 H.P., divided among 26 pumps, including a complete tail water recovery system.

Mr. Collier is active in a variety of organizations, being a member of the Board of Directors of the Bean Growers Association of California, a member of the Fire District Board, Cemetery District Board, Solano County Water Counsel, Juvenile Justice Commission, Tri-Valley Growers Advisory Committee, and the local Rotary Club. He is a former member of the Board of the Dixon Unified School District.

DICK MARKARIAN—TOP GROWER IN DISTRICT 4



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DICK MARKARIAN of Fresno owns and operates 680 acres of land producing alfalfa seed, cotton, grapes, sugar beets and walnuts. His first sugar beet crop was planted in 1961 on 40 acres.

Active in many agricultural organizations, Mr. Markarian has served in an official capacity with Fresno County Farm Bureau, Mid-Valley Fire District, California Raisin Advisory Board and Federal Raisin Advisory Board. He and his wife, Margaret have five children .

As to his first place on the District 4 Honor Roll, Mr. Markarian stated "Factors making for better than average crops are good seed, good land and good management—and good management means optimum irrigation, fertilization and cultivation."

It is noteworthy that a grower whose first beet crop was planted in 1961 should have achieved a place on the 1962 Honor Roll, and first place for District 4 on the 1963 Honor Roll.

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
McCarthy-Hildebrand	100	34.49	8,919
Duane Soares	53	34.48	8,820
Davis Reinhart	38	34.44	8,093
Frank L. Perry	22	34.42	8,330
Frank L. Perry	15	34.39	8,034
Barnard Brothers	70	34.34	9,347
Dale White	38	34.34	8,784
Banducci Farming Company, Inc.	139	34.13	8,628
Manuel Garcia	16	34.09	8,952
Coberly-West Co.	60	34.06	8,147
J. Howard Porter	75	34.00	9,622
Troy Kilgore	39	33.99	8,144
F. Sarco and Son	54	33.94	8,044
G. E. Paxton	39	33.85	8,395
Joe Garone	42	33.81	7,986
William A. Nelson	84	33.74	7,652
Pomeroy and Jewett	27	33.72	9,705
Raymond N. Costales	67	33.71	8,286
M. G. Hohlbaugh	18	33.62	10,173
Herman Carey	53	33.31	9,007
Frank A. Steiner	37	33.29	9,428
M. F. Lima	33	33.28	8,154
Leon H. Olliver	20	33.23	9,132
E. S. Guler	94	33.19	8,988
John Nobile	38	33.18	8,819
Bob Cauzza	120	33.15	9,627
R. N. O'Rourke	36	33.05	7,780
Leonard Frazier	50	33.01	7,916
Newhall Land and Farming Co.	133	32.98	8,984
W. R. Greenlee	73	32.97	9,278
McCarthy-Hildebrand	263	32.87	8,277
McCarthy-Hildebrand	121	32.86	7,900
Pete Del Testa	20	32.82	8,822
Newhall Land and Farming Co.	40	32.79	9,004
Pete Del Testa	25	32.67	9,285
Double L Farms	185	32.66	9,050
James B. Gardiner	62	32.63	8,797
Robert M. Taggart	25	32.53	8,399
S. C. Pinheiro	40	32.46	8,563
Newhall Land and Farming Co.	34	32.33	8,186
Noel Brothers	40	32.31	9,034
Gammon Brothers	35	32.31	8,646
P. A. Walls	30	32.20	9,158
Foglio Brothers	21	32.19	7,764
Hill Ranches	37	32.18	8,502
Newhall Land and Farming Co.	120	32.14	7,122
Sullivan and Gragnani, Inc.	150	32.09	8,170
Norman H. Fries	38	32.04	9,125
Hugh S. Jewett	47	31.97	9,495
Abe Shubin	5	31.96	8,239
W. L. Simmons	74	31.93	8,960
Virgil E. Ernest	69	31.89	8,177
C. E. and R. B. C. E. & R. B. Klepper	52	31.88	8,327
McCarthy-Hildebrand	98	31.86	7,774
Val Verde Farms, Inc.	98	31.86	6,844
Julia E. De Campos	65	31.75	7,264
Keith Leavelle	24	31.69	8,385
Cody A. Noel	20	31.65	7,837
Richard Stuhaan	58	31.60	8,058
Brady & Sullivan	28	31.55	8,519
D. T. Locke	50	31.54	8,320
John Teixeira	88	31.53	7,580
L. L. C. Cardoza	38	31.51	8,533
Coberly-West	119	31.51	7,928
Don McElmoyl	54	31.44	7,395
Finni and Janelli	12	31.42	7,371
Keith E. Mitchell	71	31.37	8,708
Leo Wagenleitner	37	31.34	8,148
John P. Larson	15	31.32	7,830
Turner Island Farms, Inc.	381	31.31	9,005
J. S. Borrecco	30	31.31	7,997
Melvin McConnell	38	31.24	8,510
Bruno Lometti	37	31.23	8,357
Pete Del Testa	23	31.14	8,694
Hedman and Sons Ranches	47	31.10	9,069
Schramm Ranches, Inc.	54	31.07	8,606
Troy Kilgore	39	31.04	7,121
Cerro Brothers	73	30.97	8,120
Herluf B. Fries	34	30.93	7,652
S. P. Vastbinder	37	30.83	7,936
Walton Farmer	80	30.76	9,160
Joe Fanucchi & Sons	72	30.74	9,062
Clyde Houk	198	30.68	8,192
Derby Farms	70	30.65	7,374
Fawcett Farms	67	30.64	7,035
Paul Crevolin	175	30.60	8,335
Probert and Thurman	93	30.57	7,716
Harris and Harris Farms	49	30.56	8,985
Roy Hansen & Sons	141	30.55	9,006
Jack D. Jones	27	30.50	8,284
Gonsalves M & M Farms	52	30.50	7,985
Martin Snow	70	30.47	8,495
Roy C. Miles and Son	19	30.45	6,766
R. Vallicella	150	30.35	7,867
Marchini Brothers	20	30.32	8,223
Ollie Loewen	13	30.27	7,949
Jesse S. Anderson, Jr.	42	30.25	7,877
Imperial Garden Growers, Inc.	99	30.20	8,710
Kenneth E. Royer	101	30.10	7,152
Clarklind Farms	75	30.04	8,171
Harris and Harris Farms	74	30.02	6,995
Frick Brothers	130	30.01	8,973
R. S. Barlow	95	29.89	8,244
Bob De Craemer	82	29.87	7,491
Sunset Ranch	220	29.86	8,158
J. Howard Porter	83	29.85	7,528
Floyd Hudiburg	73	29.83	8,633
Joe Fialho and Son	69	29.79	8,323
Amerigo Sandrini	36	29.75	7,997
Paul Nickel	76	29.72	6,830
Gammon Bros.	35	29.71	7,927
Kenmar Farms	71	29.65	8,177
Armas Brothers	17	29.64	8,015
C. F. Andresen	172	29.62	8,080
C. F. Andresen	149	29.60	7,696
Moletore Brothers	17	29.59	8,415
G. E. Paxton	20	29.59	7,735
Joe Garone	28	29.55	8,304
Marvin A. Lane	54	29.50	7,930
R. E. Shick	38	29.47	8,705
C. R. Wilkins	156	29.42	7,543
John F. Simas	58	29.39	8,347
John D. Mederos	69	29.31	7,943
Carl Swearingen	58	29.28	8,122
W. P. Romero	40	29.24	7,942
Vernon E. Swearingen	160	29.24	7,784
Joe G. Banducci	50	29.13	7,032
Sam and D. M. Biancucci, Inc.	67	29.05	7,727
Vernon Porter	53	29.05	7,623
Molatore Brothers	12	28.94	6,674
George Bassett Jr.	105	28.92	7,346
Redfern Ranches, Inc.	255	28.80	7,448
A. J. Trigueiro	75	28.79	7,531
Victor J. Krause	75	28.75	8,326
Kern County Land Co.	74	28.73	7,539
Robert Cardwell	37	28.72	7,714
Fred D. Browning	40	28.68	7,336
R. A. Hildebrand	103	28.66	7,348
Newhall Land and Farming Co.	20	28.65	7,701
Frank Avinelis	46	28.65	6,761
Vernon Porter	53	28.64	8,220
Banducci Farming Company, Inc.	413	28.61	8,394
Manuel Vieira, Jr.	100	28.61	7,318
Joe Fanucchi & Sons	31	28.58	8,002
Coutre Farms	37	28.57	7,662
Coberly-West Co.	76	28.56	6,277
Dan Dostinich	41	28.52	7,461
E. A. Boyd and Roy Frost	111	28.51	6,671
Melvin McConnell	77	28.47	8,154
Dick Anderson	74	28.46	7,206
W. W. Kalar	78	28.43	7,181
John S. Costa	26	28.39	8,142
Clyde Quillin	44	28.39	6,700
Robert F. Hopkins	75	28.38	7,345
Ensher, Alexander and Barsoom, Inc.	65	28.34	6,518
J. E. Gossiaux	68	28.32	8,077
Kern County Land Co.	147	28.31	7,893
James and Robert Bungard	134	28.31	7,015
Glen R. Barnett	56	28.29	7,712
M & P Farms	141	28.27	6,728
Clyde Quillin, Jr.	107	28.25	6,899
Jack D. Jones	37	28.25	6,735
Jack Ellena	25	28.23	7,786
Giusti Farms, Inc.	154	28.21	7,498
Kern County Land Co.	45	28.20	7,620
Danco Farms	31	28.18	7,857
Paul Crevolin	45	28.14	7,148
Doyal B. Wood	95	28.11	7,927
O. O. Portwood	77	28.06	8,036
W. A. Klepper	90	28.04	7,313
Joe M. Carvalho	23	28.00	7,448
Sanders and Sanders	70	27.99	8,531
Edward Kezirian	71	27.96	7,521
Wm. E. Glotz	70	27.95	7,966
Harvey T. Lauritzen	39	27.93	6,893
Taylor and Taylor	60	27.91	7,089
Giacomazzi Brothers	75	27.89	6,437
Art Vink	28	27.83	7,470
Finni and Janelli	36	27.81	6,552
Walter Willms	70	27.79	8,070
Banducci Farming Company, Inc.	296	27.78	7,895
M. O. Craddock & Son	103	27.74	7,556
Steiner and Steiner	49	27.73	7,720
Manuel C. Veiga	61	27.72	6,730
Robert Cardwell	17	27.71	6,534
Clayton Brown	85	27.65	7,183
Suhovy Brothers	14	27.60	8,164
Tom Toretta	60	27.60	8,021
Kern County Land Co.	144	27.56	8,086
F. A. Yearout & Co.	100	27.54	6,632
J. G. Boswell	297	27.53	8,000
Frick Brothers	151	27.52	7,810
Houchin Brothers Farming Co., Inc.	64	27.51	7,989
Carl B. Swearingen	98	27.42	7,590
Eldon J. Findley	17	27.37	6,481
John H. Bagdanoff	18	27.34	7,354
G. P. Orisio	49	27.31	7,374
Robert Cardwell	76	27.30	7,781
Roy Harwell	40	27.30	7,513
Morris Stuhaan	17	27.23	7,532
Garlow Brothers	99	27.23	7,303
McKittrick Ranch, Inc.	277	27.22	7,714
B. M. Beeson & Sons	27	27.19	8,119
Keith Leavelle	21	27.16	6,888
Kern County Land Co.	104	27.15	7,521
Lee Roy Janzen	113	27.11	7,146
Cleo Smith	31	27.05	7,769
Pucheu Ranch	70	26.88	7,161
United Farms Co.	125	26.87	7,674
Schroeder and Holtermann	147	26.86	7,215
Phillip Swearingen	46	26.86	6,817
Claremont Farms	28	26.85	8,528
Double L. Farms	80	26.80	7,643
McKittrick Ranch, Inc.	221	26.79	7,646
J. M. Lauritzen	56	26.79	7,432
Harold J. O'Banion	39	26.77	6,559
Newhall Land and Farming Co.	116	26.74	7,771

Grower	Acres Harvested	Tons Per Acre	Lbs. Sugar Per Acre
K. Malofy and Son	73	26.71	7,479
Sam and D. M. Biancucci, Inc.	85	26.69	6,785
D. O. Wills	40	26.65	7,936
William J. Cairns	37	26.65	5,959
Frank Orff	60	26.64	6,580
Jensen Ranch	129	26.47	7,957
A. LoBue Farms	116	26.43	7,480
Antongiovanni Bros.	74	26.37	6,155
Costerisan Farms	178	26.36	7,829
Joe Fanucchi & Sons	41	26.34	6,812
Lee Herring	19	26.32	7,133
Five Points Ranch Inc.	153	26.29	7,440
Hans Hansen and Son	75	26.25	7,135
Donald Jones	1	26.24	6,082
Mussel Slough Farms, Inc.	40	26.23	6,468
A. H. Wegis and Sons	70	26.20	8,337
Alex Buchnoff	18	26.20	7,509
R. W. Renner	46	26.20	5,722
Palm Farms, Inc.	130	26.18	6,608
N. L. Ritchey	166	26.16	7,063
Sanders and Sanders	155	26.11	7,165
Deavenport Ranches, Inc.	99	26.11	7,091
Paul Hanson	44	26.09	7,305
Margaret and Steve Clares	103	26.07	7,091
Harold J. O'Banion	76	25.99	7,568
Hank Anderson	75	25.99	6,430
John Teixeira	28	25.97	6,456
Walter Willms	47	25.93	7,696
Kenneth Abrahamian	68	25.93	7,224
R. E. Ripley, Jr.	13	25.91	6,680
W. M. Colson	74	25.90	6,750
Giusti Farms Inc.	152	25.86	7,355
Nagel Brothers	50	25.86	7,303
Newton Brothers	155	25.75	6,983
Uchita Brothers	31	25.72	6,271
Duane Swearingen	38	25.67	5,591
Mason Snow	58	25.63	7,402
Motte Ranches, Inc.	74	25.62	7,163
Garlow Brothers	64	25.57	7,809
Edward R. Lewis	197	25.53	7,899
Inco Farms Company	155	25.53	6,097
T. L. Burns	69	25.48	6,788
Abe Shubin	13	25.48	6,467
Frank Lopes	50	25.47	7,264
E. B. Waters	38	25.45	7,034
Schromm Ranches, Inc.	74	25.41	6,881
Marchini Brothers	35	25 40	7,031
David Chamberlain	39	25.37	4,749
Calflax Co. — Calflax Ranch	40	25.33	6,140
Wolfsen Land and Cattle Company	426	25.32	6,943
Ensher Alexander and Barsoom, Inc.	76	25.32	6,198
Crettol Brothers	105	25.31	7,077
Yip Farming Company	65	25.30	6,512
Vista Farms	33	25.28	7,332
Kern County Land Co.	140	25.28	6,745
Joe Fanucchi & Sons	179	25.27	7,723
Palm Farms, Inc.	109	25.22	6,512
B. J. Handel Company	74	25.20	6,875
A. H. Wegis & Sons	111	25.19	7,950
J. C. and H. H. Lewis	80	25.19	7,547
Westlake Farms, Inc.	300	25.19	7,038
Pomeroy and Jewett	39	25.15	7,721
L. J. McCarthy	105	25.15	6,775
Joe Fanucchi & Sons	69	25.15	6,378
C. A. Makin Ranch	26	25.10	7,354
Destefani Brothers	59	25.09	6,378
Suhovy Brothers	13	25.03	7,544
R. H. Howard	37	25.03	6,383
Leo Wagenleitner	49	25.02	7,106

ELMER WALKER BRANDES -- 1891-1964

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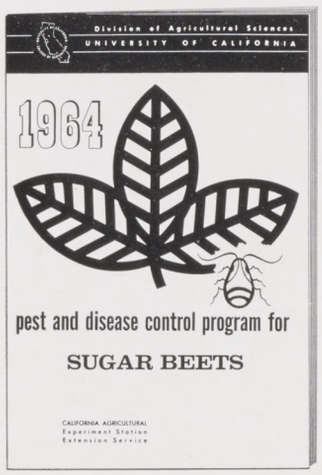
SUGAR technologists and all engaged in research in tropical agriculture will be saddened by the death of Elmer W. Brandes from a heart attack on February 3, 1964 at his home in Palm Beach, Florida. Dr. Brandes was best known for his years of leadership of research in the U.S. Department of Agriculture on the production of sugarcane, sugarbeets, and sweet sorghum.

From 1919 to 1922, as pathologist in the Office of Sugar Plants, that he was later to head, he conducted the definitive studies on the devastating sugarcane disease, mosaic, and showed it to be caused by a virus spread by the corn leaf aphid.

In the 1920's and early 1930's, the sugarbeet industry was about to be driven from the Mountain States and Pacific Coast area by curly top, a virus disease spread by the beet leafhopper. In the Great Plains area, Cercospora leaf spot had brought several companies to near-bankruptcy. In the North Central States, many factories were being closed because of leaf spot and black root.

To meet these problems, Brandes organized and administered a program of breeding disease-resistant sugarbeets comparable to that with sugarcane. As a result of these breeding investigations which started in 1925 and still continue, sugarbeet production in the United States has been stabilized and the threat of crop failure because of disease averted.

PEST AND DISEASE CONTROL BOOKLET



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THE California Agricultural Experiment Station Extension Service offers a new 12-page leaflet entitled "Pest and Disease Control Program for Sugar Beets."

The principal fungus and insect pests of sugar beets are listed together with recommended control chemicals, application rates and methods.

It should be noted that the recommendations for seed treatment to control damping off and wireworms are those used by Spreckels Sugar Company. Hence it is not necessary to treat any seed issued by the company.

A RECORD HARVEST

Continued from page 18

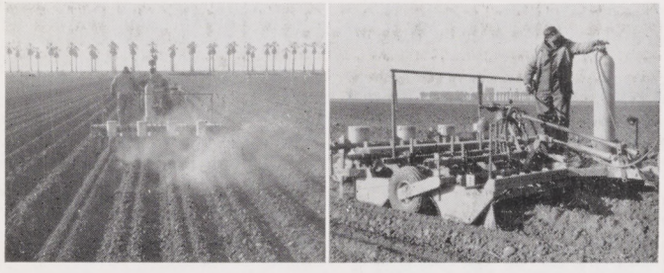
cal yield by the following spring. In general these plantings failed to produce a satisfactory crop by the end of November, even though the plants were healthy and thrifty in appearance. There was just insufficient time to grow an acceptable crop and these late planted crops fell short of producing a profit in the spring, even though they may have doubled in size over the winter.

Disease problems in 1963 were not generally serious. All the ordinary diseases were present during the year, but they were not as widespread and perhaps their effect upon the crop was minimized. The late planting practiced in the North San Joaquin and Sacramento Valleys was successful in escaping the aphid population peak and consequently much virus yellows was avoided. Planting practices in other areas minimized the toll of the nematode. Leaf spot was observed in several locations, and in these areas the disease has the potential of becoming a serious problem. We intend to be alert to this threat and will combat the disease by all means available, including varietal resistance and fungicidal spray programs when these are applicable.

The reports from the field are most encouraging and it appears that the 1964 crop is off to an excellent start. The start-up problems suffered at Mendota last year are behind us and we are looking forward optimistically to a new harvest commencing in July.

WE APOLOGIZE

To err is human, but two wrong names in one line sets an unenviable record for this publication. The COVER COMMENT cut and caption for the March-April issue are here reproduced, appropriately corrected.—Ed.



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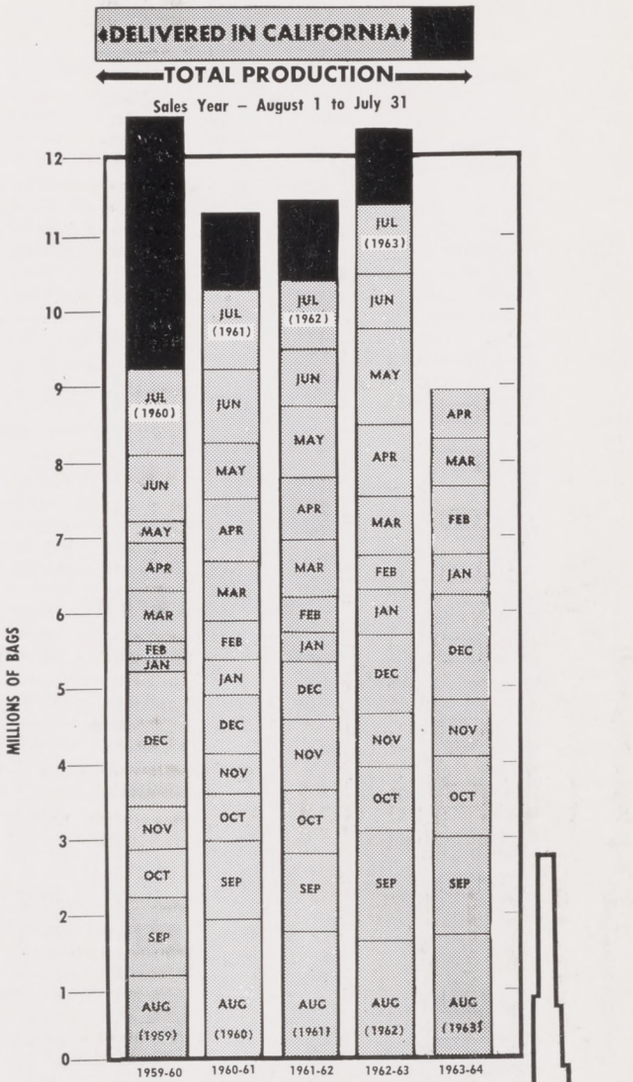
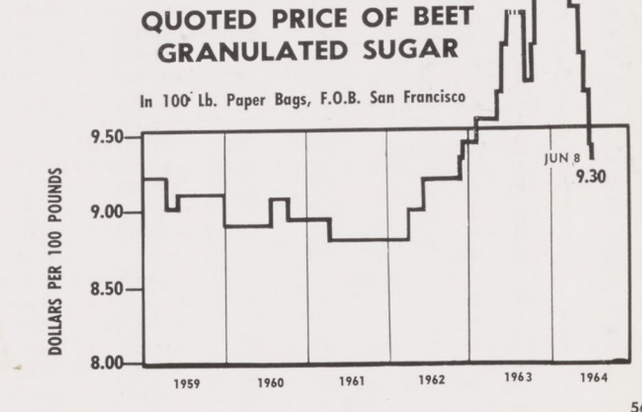
COVER COMMENT—Vincent Kovacevich, farming west of Fresno, plants beets with a K C sled equipped with Milton planter units and Byehoe tillers to incorporate liquid Tillam.

International Harbison-Paine

PRODUCTION AND DELIVERIES OF BEET SUGAR IN CALIFORNIA



QUOTED PRICE OF BEET GRANULATED SUGAR



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The SPRECKELS SUGAR BEET BULLETIN is issued bi-monthly by the Agricultural Department of the Spreckels Sugar Company as a service to its growers. Mention of specific methods, devices and implements does not constitute an endorsement by the Company. All photographs by the editor unless otherwise indicated.

AUSTIN ARMER, EDITOR SPRECKELS SUGAR COMPANY WOODLAND, CALIFORNIA

SPC - DAVIS

PUBLISHED FOR CALIFORNIA SUGAR BEET GROWERS BY THE SPRECKELS SUGAR COMPANY

SPRECKELS SUGAR BEET BULLETIN

VOL. 28 JULY-AUGUST, 1964 NO. 4

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WHICH IS YOUR SAMPLE?

Clean, well topped beets not only increase daily factory capacity, they also

SPEED YOUR HARVEST

and

REDUCE YOUR COSTS

RECEIVING STATIONS IMPROVED

THE 1964 HARVEST now under way embraces the largest acreage ever contracted by Spreckels Sugar Company. To make certain that the record yield of beets is received without interruption or congestion, the Spreckels Agricultural Department has been implementing an extensive receiving station improvement policy.

While the number and location of receiving stations remains the same as in 1963, receiving capacity has been importantly increased. The largest single project was at Lincoln (Southwest of Fresno). A portable piler was replaced with a permanent loading station designed to receive, clean and deliver beets exclusively to transport trucks. All components of this most modern design were fabricated in San Joaquin Valley machine shops. The excavation, concrete work and final erection were performed by a local contractor.

SCALE DECKS LENGTHENED

Most Spreckels growers have ceased to use "bobtails," and are now delivering beets in long semi's or in doubles of maximum legal length. To accommodate this trend, truck scales had to be rebuilt or replaced. The 1964 modernization program included new 70 foot truck scales at the following stations:

Arvin	Lerdo	Los Banos
Buttonwillow	Libfarm	Octol
Conner	Lincoln	Tudor

OTHER IMPROVEMENTS

The Helm Station was completely rebuilt and now has a shuttle conveyor so that either rail cars or transport trucks can be loaded at the push of a button.

At Lerdo the timber ramp was replaced with a concrete structure, and an improved traffic pattern developed.

At Conner (which is actually two complete receiving facilities), an extensive paving program was completed to reduce the dust nuisance and improve the traffic pattern.

Beet handling and cleaning capacity has been increased at both Elsa and Welby stations.

RIGID MAINTENANCE SCHEDULE

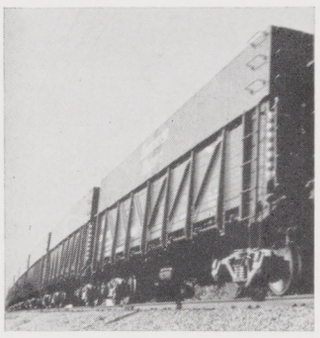
With the objective of maintaining uninterrupted service at all receiving stations, a complete maintenance program is followed. Expendable items are replaced at all stations, and close attention is given to lubrication. Unhappily, one of the costliest maintenance items comes under the heading of theft and vandalism — some shocking cases have occurred during intercampaign.

The teamwork of the District Engineers, Agricultural Shop Foremen and the travelling service crews is coordinated, both in maintenance and new construction, with the sole objective of achieving a smooth-running harvest.

Bob McGregor Photo 58

NEW RECEIVING STATION at Lincoln approaches completion.

MORE SUGAR BEET CARS IN SERVICE



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THE SOUTHERN PACIFIC COMPANY has been building cars for sugar beet service, and 350 new cars were added to the system in time to serve the 1964 harvest.

The new cars are distinguished by their steel-reinforced plywood extensions, which replace the 2 inch planks in use on earlier cars.

The photo was snapped as a string of the new cars left S. P.'s Roseville shops.

60

COVER COMMENT

The beet sample, with its accompanying sealed analysis ticket, is the basis for the grower's payment.

RECENT HARVESTER DEVELOPMENTS

By AUSTIN ARMER
Agricultural Engineer, Spreckels Sugar Company

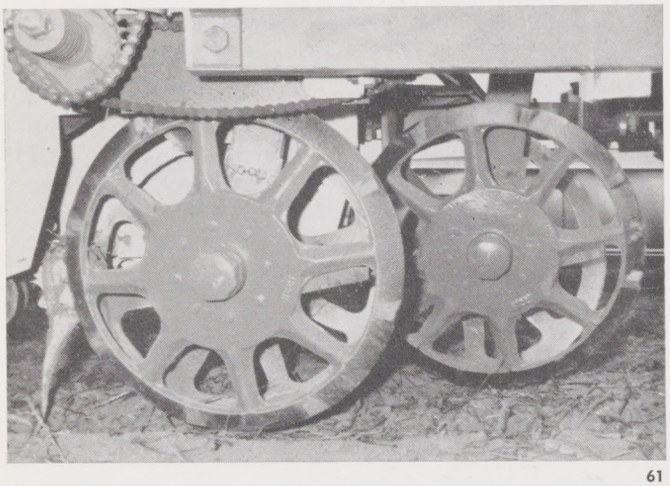
MANUFACTURERS OF beet harvesting machinery "have the situation well in hand." The major problems have been solved, and recent developments show closer attention to details.

HARVESTING 2-ROW BEDS

Over the past 15 years, harvesting machinery builders seem to have forgotten that a sizeable share of California beet acreage is planted on 2-row beds. This 14-26 inch spacing (or minor modifications) is still almost exclusively used in the Salinas and Imperial Valleys, and is not uncommon elsewhere. The only harvester, (until recently) designed specifically for this row spacing was the original Marbeet 2-row, first built in 1944 and still in general use.

In order to operate the new Marbeet Twin-row on 2-row beds, Blackwelder Mfg. Co. has canted the spike-wheels so that they will pick up a pair of rows spaced 14 inches or more. The fact that beets planted on 2-row beds tend to "lean out" from the bed center suggests that beets picked up by the canted spike-wheels might well stand straight up (radial) as they pass through the topping disks, with consequent better topping.

Lifter-loaders have been only partially satisfactory in 2-row beds when adjusted to work on alternate rows. To improve this situation, Wescon tank-type harvesters are now offered with staggered pairs of lifter wheels to fit the closely spaced rows on each 2-row bed. Root recovery is evidently improved in comparison to the older alternate-row system.

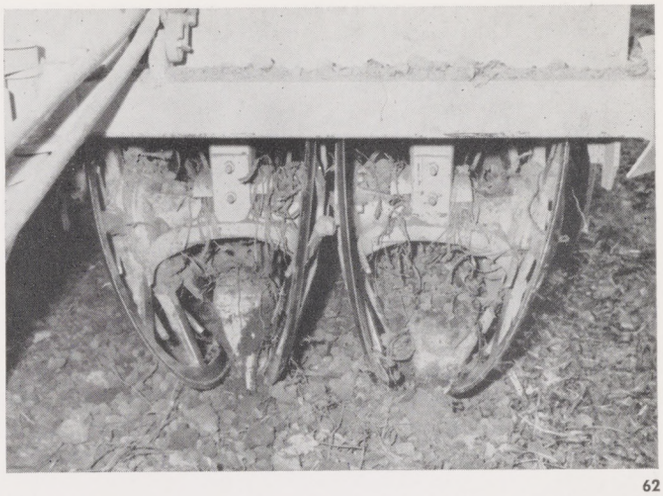


61

WESCON lifter-loader is available with staggered pairs of lifter wheels to accommodate close-spaced rows.

Gemco and John Deere lifter-loaders can now be equipped with special lifter posts and wheels so that the pairs of lifter wheels may operate side-by-side on the narrow-spaced rows.

Farmhand lifter wheels may be moved close enough together so that the spokes of the inner (adjacent) wheels are made to interleave. This arrangement seems to give no trouble.



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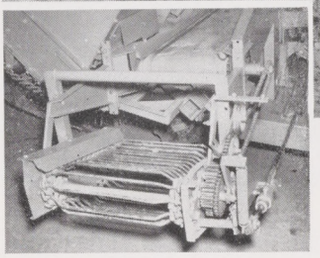
GEMCO and JOHN DEERE lifter wheels, hubs and support pillars have been redesigned to permit lifting two rows as close as 14 inches apart.

BEET TOP RECOVERY

Lockwood Grader Corporation (Gering, Nebraska) has a new model of their 2-row pickup topper which delivers 4-row windrows. It is equipped with the tried and true Innes pickup cylinder. This has been used for picking up beet foliage for many years, having proved successful on experimental machines as early as 1945, and more recently on the Speedy and Wescon pickup toppers.

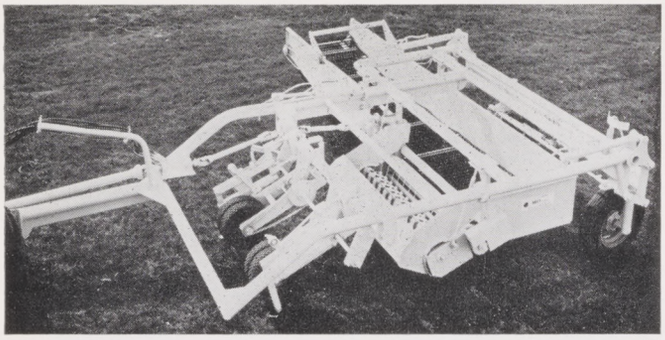
The Marbeet twin now delivers 4-row windrows of tops when equipped with the Windrower Attachment. This potato chain conveyor automatically reverses direction when swung out, so that tops from four rows are deposited in a single windrow. Dirt separation is aided by the "inside-out" installation of the potato chain.



63

Blackwelder Photos

MARBEET "TWIN" now accommodates two rows on a bed (14" minimum spacing).
TOP WINDROWER (left) cleans the tops from four rows and deposits them in a single windrow.



Lockwood Photo 64

LOCKWOOD "BEETMASTER" topper gages each beet in two rows; slices off crown at adjustable height; picks up tops, and deposits them in 4-row windrows.

Farmhand Photo 65

FARMHAND Top Saver for 1964 employs disk topping units, and is available with either windrowing or elevating top conveyor.

A newly developed topper is the 1964 Farmhand Top Saver. This machine employs rotating disk toppers, and is available either with a windrowing or elevating conveyor.

DIRECT LOADING OR TANK TYPE?

During the 1964 spring harvest in California, several manufacturers tried out experimental models of two or three row direct loading lifters. The resurgence of interest in direct loaders can be traced to the work done by various Spreckels growers in the Manteca area, who demonstrated that clean beets can be delivered by a direct-loading lifter, *if an efficient cleaning screen is provided.* In this respect, much credit is due Ed Lagorio, Henry Baumgartner, Bill Burgess, Bill Sousa and Irwin Petz. All of these growers either rebuilt existing lifter loaders or built new machines from the ground up.

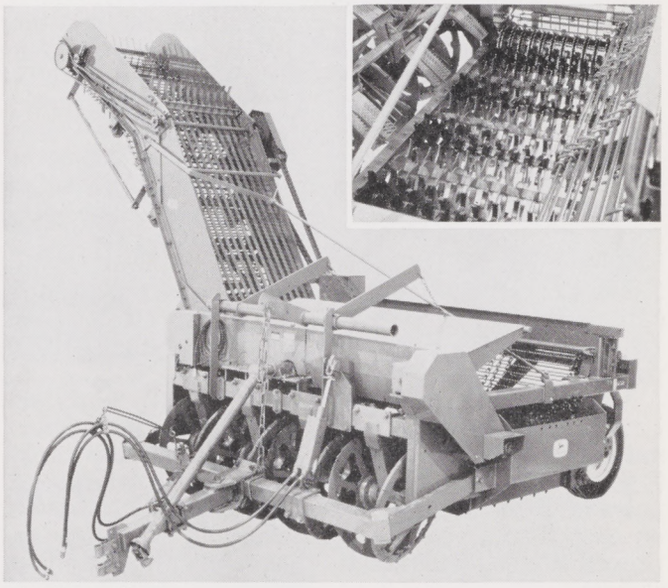
New direct-loading lifters are now offered by John Deere, Farmhand, Gemco and Krier. All of these machines have improved dirt and trash removing facilities, and under normal conditions will deliver beets which are as clean as those delivered by tank-type machines with optional cleaning rolls. (Under extremely cloddy conditions, the direct loaders deliver slightly more dirt tare). Assuming that the direct loader can deliver acceptably clean beets, a comparison between the direct loader and tank type machine can be drawn, as follows:

	DIRECT LOADER	TANK TYPE
First cost	Lower	Higher
Operating cost*	Higher	Lower
Maintenance cost	Lower	Higher
Daily capacity*	Lower	Higher
Soil compaction**	Lower	Higher

*Depending on number of trucks available.
**If truck does not follow tank type over entire field.

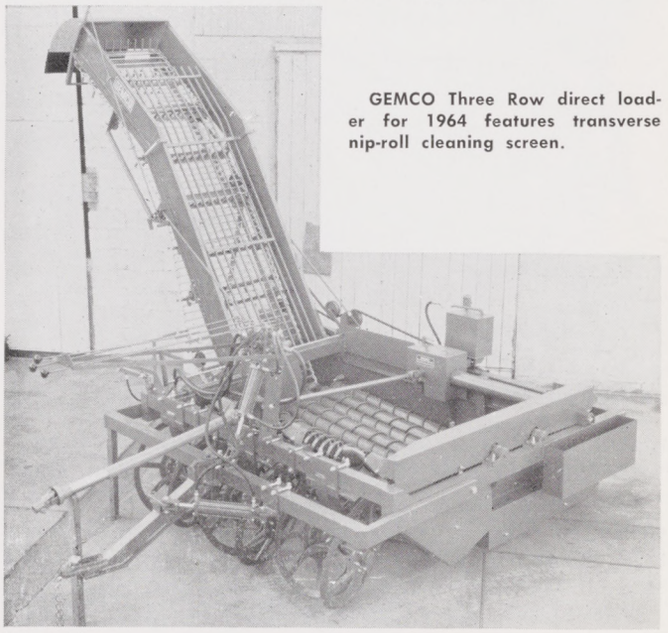
In general, this comparison favors the direct loader. However, the comparison is difficult to make on an absolute basis, as witness the variables marked with asterisks.

Each grower or harvesting contractor will be obliged to weigh carefully all of the factors affecting his particular operation before deciding between a direct loading and a tank type machine.



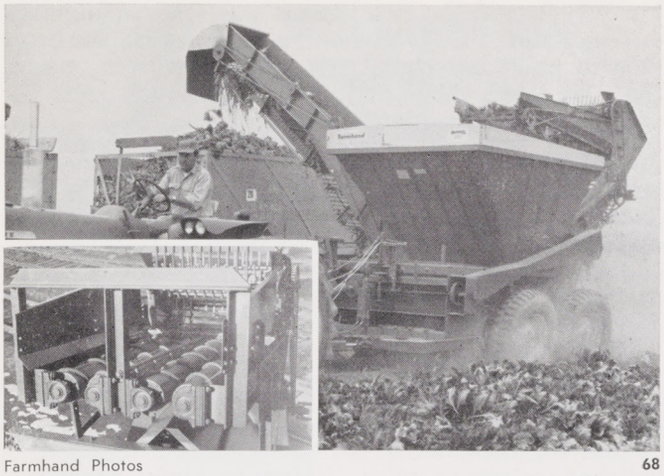
John Deere Photos 66

JOHN DEERE "430" Three Row Direct Loader. Inset shows Rienks type dirt screen and potato chain trash conveyor. Flails at left "spank" the beets clean, and assist in throwing trash onto potato chain.



GEMCO Three Row direct loader for 1964 features transverse nip-roll cleaning screen.

Gemco Photo 67



Farmhand Photos 68

FARMHAND "350" Two Row Tank Type lifter-loader. Cleaning rolls (inset) are optional but so effective that they are indispensible in most California fields.

Farmhand Photo 69

FARMHAND "150" Single Row Tank Type harvester with disk topper and cleaning rolls is new for 1964.

Blackweider Photo 70

MARBEET "H" single row pull type harvester. Improvements for 1964 include larger tires for improved lateral stability.

TECHNICAL SALES STAFF SERVES INDUSTRIAL USERS OF SUGAR

THERE WAS A TIME — and not so long ago — when housewives purchased the biggest percentage of the Spreckels Sugar Company's total production.

Then along came World War II and into defense work went the housewife. With less time to spend in the kitchen, the working homemaker turned to various convenience foods then on the market. She discovered to her delight that commercially produced jellies and jams, cakes and pies, canned fruit and fruit drinks and other prepared items were every bit as good as she herself used to make — and required a lot less fuss!

With the pattern thus established, the ensuing years have seen more and more of these prepared convenience foods capture more and more of the housewives' budget.

These changed buying and homemaking habits have also wrought tremendous changes in the marketing of sugar. Industrial sugar users, not house-

71

Prescott Lloyd, Calvin Purvis and Donald Leetham put heads together to solve a sugar storage problem for one of Spreckels Sugar Company's industrial accounts.

72

LIQUID SUGAR tankers supply many industrial users—now the principal sugar using group.

wives, now constitute the principal sugar using group. Food technologists, not homemakers, cast the critical eye at sugar quality. Specialists who use sugar by the carload, not the home canner who uses sugar by the cupful have become the discriminating sugar shoppers.

And such discriminatory buying by trained and knowledgeable buyers has been to the distinct advantage of the Spreckels Sugar Company. With its patented CAP and other quality-ensuring manufacturing techniques, the company's products are unsurpassed and recognized as such throughout the food processing industry.

Quality products notwithstanding, the fierce competition throughout the sugar industry demands that additional service be provided to the industrial consumer, any number of whom individually may purchase more sugar in one day than an entire community of housewives once purchased during an entire year. In the area of service to the industrial consumer, the Spreckels Sugar Company does an outstanding job.

Backing up the efforts of Spreckels' industrial sales force is a staff of highly qualified technicians. Known collectively as the technical sales staff, each member of this group is a combination salesman, food technologist, sugar chemist and engineer. It is their collective and individual responsibility to work with industrial sugar using customers to provide assistance above and beyond that which can be expected of non-technical salesman.

The service provided by the technical services representatives may be in the form of assisting a customer design and install a system for handling bulk or liquid sugar. Or it may be providing advice on chemical matters or conducting a product analysis. Or it may be handling a customer complaint during which the technician has as often as not been able to point out that the problem involves one of the customer's own production techniques or it involves something other than sugar.

Still another function of the technical services staff is to be on the lookout for new and useful devices. One result of such research led to the installation of sterilizing lamps in customers' liquid and blend storage tanks, thus eliminating bacteria problems which had long plagued the food processing industry.

In any event, the technical services staff of the Spreckels Sugar Company is a definite adjunct to the selling arm of the company. While the members of the technical staff may not necessarily be the polished salesman with the order book, they can and do offer those extras which help sell sugar and which help keep customers ordering Spreckels Sugar.

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Calvin Purvis, of the Spreckels Sugar Company's technical services staff listens intently to a customer's problem.

The senior member of Spreckel's technical staff in terms of service is Calvin Purvis. A graduate of University of the Pacific, Cal began his career in the Chemical Department. The broad area of trade encompassed by his specialized background includes the beverage, freezer and preserving industries.

A second member of the technical services staff is Prescott Lloyd, a graduate of Stanford University who spent several years as assistant laboratory director of one of the nation's largest canners. Included in his past service is 11 years as technical sales consultant with a California sugar refiner plus a stint as production manager for a producer of fruit drinks. His particular areas of specialization are the baking, confectionary and citrus industries.

The newest member of the technical sales staff is Donald Leetham. Awarded a degree in food technology at Oregon State University, Leetham was a member of the Spreckels chemical research department for six years before joining the Sales Division. His principal area of specialization includes the ice cream, dairy and canning industries.

In total, the Spreckels Sugar Company's technical services staff encompasses over 60 years experience in the technology of food processing. This experience, plus an awareness of and interest in the ever changing science of food processing makes them invaluable partners not only to the Spreckels Sugar salesmen, but to the users of Spreckels Sugar.

SPRECKELS INTRODUCES NEW SUGAR PRODUCT

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SUGAR 'N LEMON, a tangy combination of superfine sugar and natural lemon flavoring, has been introduced by the Spreckels Sugar Company. This delicious new product hits the market just in time to be an elegant companion for iced tea and other cool summer drinks.

In handy individual service packets, Sugar 'n Lemon eliminates the messy squirting of lemons and provides restaurant customers with a sanitary, neat way to flavor their iced tea.

According to statistics compiled by Spreckels for the restaurant industry, the use of Sugar 'n Lemon will increase the profit on each serving of iced tea. Besides costing approximately 15%-20% less than the combined cost of fresh lemons and packet sugar, Sugar 'n Lemon also saves times and labor in slicing lemons.

It is contemplated that in the near future, Sugar 'n Lemon will be available to the grocery as well as the restaurant industry.

Notes from Our Field Men

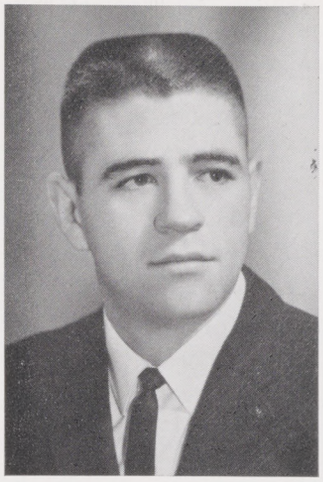
W. J. HURLEY — LOS BANOS


75

This year, I had the opportunity to observe the Gemco, the Marbeet Midget, the Farmhand and the large two-row pull type Marbeet harvesters, working under the same conditions. The results proved very little, except one thing — the operator of each individual machine was the important factor.

Each machine, when operating at its best, could not show any advantage. In checking dirt weight and tare on the individual loads I could not say which machine was the most outstanding. The number of beets left in the field was the only factor. The wheel-type lifters did the poorest job, particularly where doubles existed. They either cut the beets in two or left them in the field.

F. R. NELSON — BAKERSFIELD

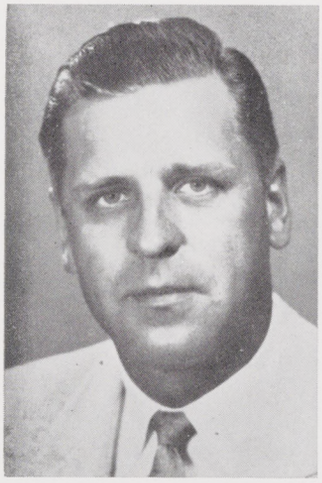

76

The Marbeet Twin harvester has proved its worth thus far here in Kern County. Clean beet percentage delivered by this machine has been excellent. These harvesters have consistently done 95% and better. One load of beets was received with a clean beet percentage of 99.2%. The amount of dirt and trash screened out at the stations has been from 40 to 60 percent less than that from beets dug by the wheel lift type machines.

Opponents of the Twin might say they can't dig the tonnage that the wheel lift machine can. But with heavy ground and average tonnage, several Twins with new operators on them have consistently delivered over 300 tons a day and as much as 350 tons.

Two possible objections I can see in the Twin are the numerous adjustments the operator must make and the moving parts to lubricate. However, any Marbeet owner I have talked with wouldn't trade his machine for any other type.

MARTIN CHERNEK — BAKERSFIELD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Every year a controversy arises in the sugar beet industry, as to what is the best make and type of harvest equipment. The question "which make of machine does the cleanest job of harvest" is of prime concern to growers.

Last year during the 1963 fall campaign, I compiled daily information on clean beet deliveries for every make and type of machine operating in my district.

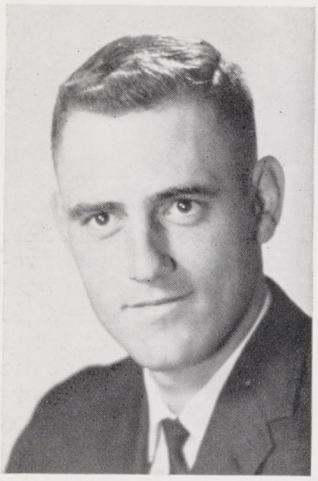
The results of this study showed that the lifter-loader type of machines consistently delivered more dirt and trash than the spike-wheel types. The difference was on the order of 16% more dirt delivered by the lifter-loaders.

While the differences in percent tare are not great, they show a remarkable consistency in favor of the various spikewheel machines.

EDITOR'S NOTE—Lifter-loaders—either direct loading or tank type—deliver far less dirt and trash when provided with nip-roll screens.

Continued on next page

OLEN ZIRKLE, JR. — MANTECA



78

Krier Engineering and Sales of Modesto are manufacturing a sugar beet harvester, which was described in the March-April Sugar Beet Bulletin. It is the opinion of the agricultural staff at Manteca that this harvester has solved the dirt problems which have plagued the direct loading type of harvester.

Previously the manufacturers of large tank type models held some claim to solving this dirt problem using as much as 35 feet of cleaning and conveyor chains which they claimed greatly reduced dirt but did little to remove trash. Although the tank type of machine was thought to aid in opening fields, it was soon recognized that the tank afforded little advantage when used on long rows.

The new Krier machine promises to minimize most dirt and trash problems because the spiral rolls which carry the beets from the lifter wheels to the elevator chain remove both dirt and trash. The elevator chain need not be used for cleaning purposes, thus allowing the use of stronger close-spaced links.

As an added convenience this machine has a removeable elevator and axle extension which allows quick conversion to legal width so that it may be transported by truck.

While the machine is a standard lifter-loader type, enough room has been left behind the rolls to allow sufficient storage for turns. This storage is further facilitated by a quick acting hydraulic clutch on the elevator chain.

Also offered is a conversion for generally all lifter-loader harvesters. The conversion includes spiral rolls, a redesigned elevator, plus reconstruction of the original frame.

AN APOLOGY

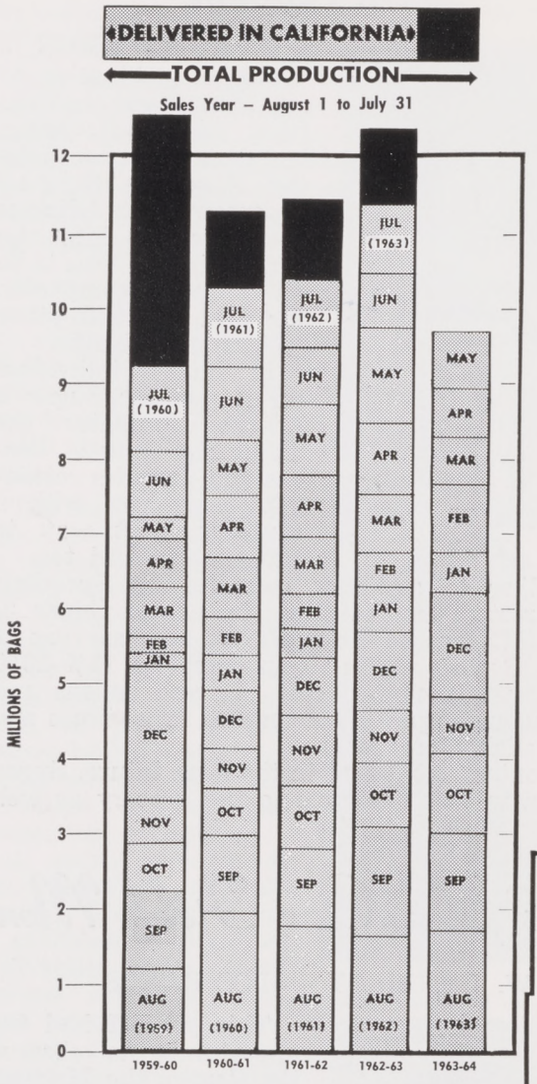
In the 1963 Honor Roll, published in the May-June issue, the following entry was omitted:

DISTRICT I—SPRECKELS

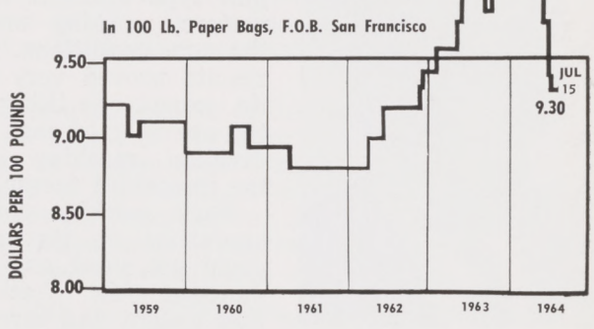
Grower	Acres Harvested	Tons per Acre	Lbs. Sugar per Acre
Roper & Culver	120	39.49	11,894

Our apologies **and** congratulations.

PRODUCTION AND DELIVERIES OF BEET SUGAR IN CALIFORNIA



QUOTED PRICE OF BEET GRANULATED SUGAR



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AUSTIN ARMER, EDITOR — SPRECKELS SUGAR COMPANY — WOODLAND, CALIFORNIA

SPC - DAVIS

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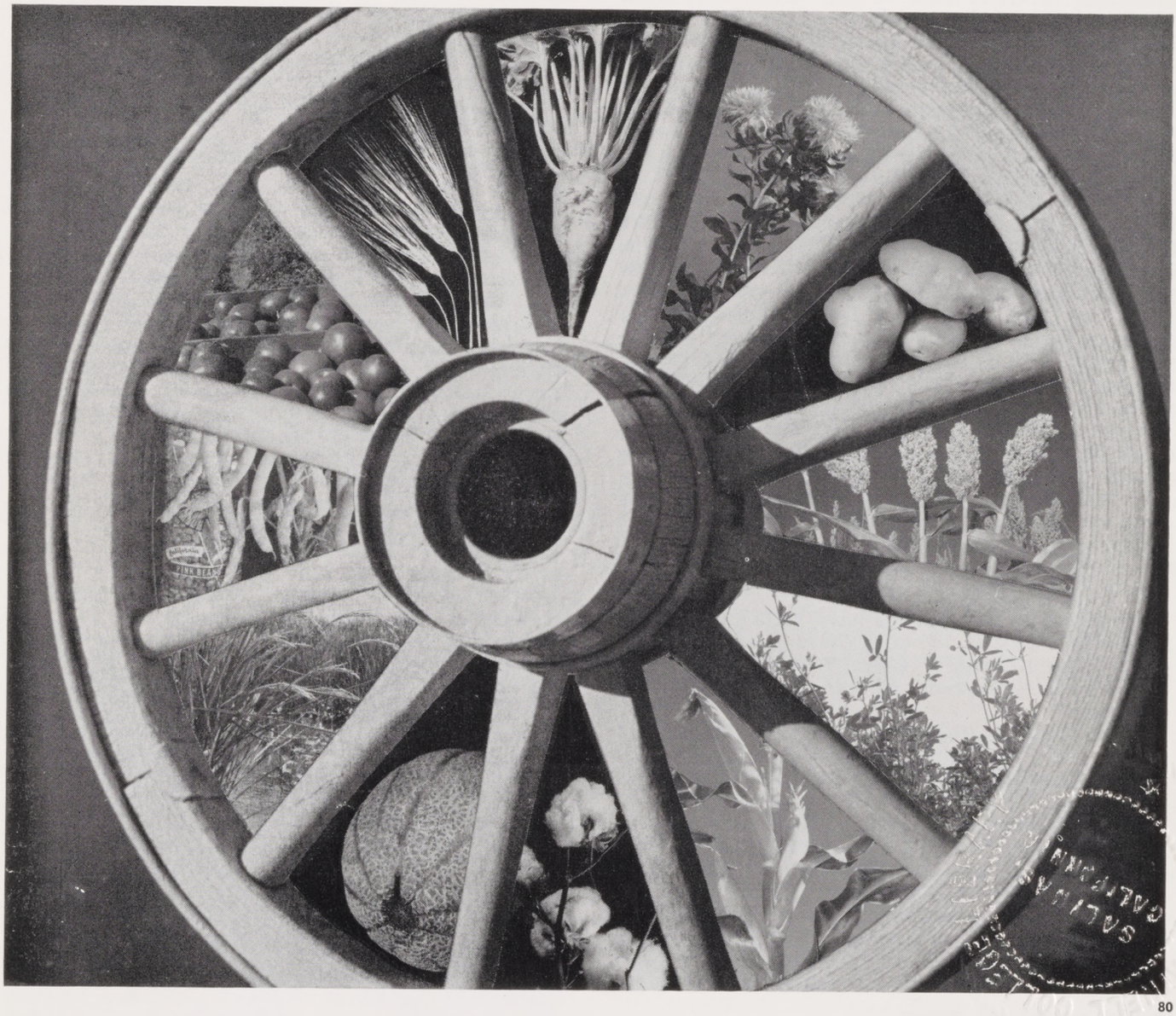
SPRECKELS SUGAR BEET BULLETIN

VOL. 28 SEPTEMBER-OCTOBER, 1964 NO. 5



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ROTATE!

Sugar beet nematode is a serious threat to successful sugar beet production.

Proper rotation is one method of minimizing the chance for infestation and maximizing yields on infested land. Following one beet crop successively with another is an open invitation to nematode.

ROTATION IS VITAL TO CONTINUED SUGAR BEET PRODUCTION

By DR. R. T. JOHNSON
Vice President, Spreckels Sugar Company

THE AGRICULTURAL AREAS of California are endowed with a wide range of favorable environmental factors. A mild climate provides a long growing season for crops that are capable of utilizing it. Available water in most areas eliminates the need for periodic precipitation during the growing season, and the possibility of crop failures should it not materialize. Good land is available in vast quantities. These factors make California by far the most productive state in value of agricultural commodities in the entire nation.

With all of these assets, it is the firm responsibility of the operators of these lands to maintain the productivity of them for current use and even enhance the agricultural value of this land for the production of crops for generations yet to come. Much has been done toward achieving this goal. Land management studies by public as well as private organizations have provided much information and pointed out methods by which the agricultural productivity value of land could be improved.

Much is known about fertility. The optimum use of plant nutrients has been established within reasonable limits for many crops in many areas.

Irrigation studies have resulted in a more judicious use of moisture, to maintain plants in a satisfactory state of growth without moisture stress on the one extreme or water-logging on the other.

Rotation

Various rotation systems have been studied, and many benefits can accrue from a good system of plant rotation. These generally include:

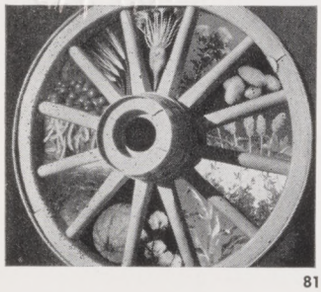
1) The improvement of soil tilth and physical condition.

2) Better utilization of the plant nutrients available by including in the rotation such crops whose roots permeate the soil at different depths.

3) Better weed control.

4) Better control of many insects and diseases.

It has been said that insects are the chief rivals of man for the available food in the world. Certainly this has been demonstrated many times and we should make every effort to control or evade these pests by any means we can. Any attempt to control a pest must be based upon the knowledge of the life cycle of that pest. An example of this might be cited in the case of the sugar beet nematode, *Heterodera schachtii*, an eel worm often referred to as an insect. Many years ago, before the habits of this pest were well understood, it became destructive in many beet-growing areas because of improper management and rotation practices. Since then, a great amount of information about the sugar beet nematode has become available through research studies. Attempts to use chemicals for control of this pest have met with little success. The degree of control has been variable and the cost has been too high for a sugar beet crop to bear. Breeding studies aimed at the development of varieties of sugar beet which may be resistant to this pest appear promising, but are still a long way from commercial reality.



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COVER COMMENT — The eleven crops shown in addition to sugar beets are only a fraction of the many crops which offer a rotation of non-host crops to sugar beet nematode.

The cover photo does not imply that sugar beets should be planted only once in 12 years — 3 to 6 is a realistic range for the control of sugar beet nematode.

Nematode Control

For these reasons, the only readily available means of living with this pest has been determined to be a good crop rotation in which successive beet crops are separated by several intervening crops which are not hosts to the sugar beet nematode.

In the past several years, while the demand for sugar beet acreage has been high, many of our prime beet growing lands have been developing rotations that are not good for the long term growing of sugar beets. Beets are being grown too often on many of our lands. The ominous result of this practice in some areas is beginning to show itself by the appearance of symptoms of sugar beet nematode in areas that have not previously been infested. This nematode is transported in many ways; probably the most important is on equipment moving from infested fields to uninfested fields. With a good rotation even this may not be too serious. However, with a succession of sugar beet crops, a wonderful opportunity is provided for the rapid build-up of this dangerous pest. This is an example of why it is important to establish immediately and maintain continuously a sound rotation.

Other Virtues Of Rotation

The sugar beet nematode is only one example of the reason why a good rotation system should be established. Southern Root Rot caused by *Sclerotium rolfsii* is another organism that could be cited as an example of a pest that can be built up in the soil by improper rotations. This pest, unlike the sugar beet nematode, is a fungus disease.

It is because of the spread of some of these problems and the threat they present to continued sugar beet growing, that Spreckels Sugar Company at this time is making such an effort to encourage growers to provide themselves with a good rotation on sugar beet growing lands. Some meetings have been held with beet growers in which we have discouraged the practice of beets following beets. There is abundant evidence which indicates this to be a very bad agronomic practice. Acceptable rotations should provide for beets being grown on the same land only one in three, or one in four, years where nematode is not known to exist, and even longer where sugar beet nematode or other problems have been identified.

CAREFUL ROTATION REDUCES CROP LOSSES DUE TO SUGAR BEET NEMATODE

By BERT LEAR[1]

MANY YEARS BEFORE the development of nematocidal chemicals, proper use of crop rotation was stressed as the best method available for control of the sugar beet nematode, *Heterodera schachtii*. Today, crop rotation is still our best solution. Even though very effective chemicals are used for the control of many plant parasitic nematodes, their use against the sugar beet nematode on most of the sugar beet soils of California has not proved economically feasible. Very favorable yield responses due to control of sugar beet nematode by chemicals on cole crops such as Brussels sprouts and cauliflower have been obtained. Consequently, chemicals are used routinely for control of this nematode on these crops. Many new chemicals are being tested each year and one which proves of value to control this nematode on beets may be developed. For the present, proper rotation of crops used in conjunction with early planting, where feasible, and effective sanitation will reduce losses in yields due to sugar beet nematode.

How Long A Rotation?

The length of an effective rotation will be dependent on individual field histories. No matter what the crop history, it is not advisable that sugar beets be grown for two consecutive years on any field. Light, non-detected infestations may build up greatly on one crop of sugar beets so that plant injury will result the second year. Such rotations in fields of new areas or where sugar beet nematode has little or no distribution such as the southern San Joaquin Valley will be of great value. This type of rotation is referred to in Holland as "protective or preventive" rotation. If a susceptible crop is not grown more often than once in three years, whether the field is infested or not, the nematode infestation may never build up to damaging populations, even if it is introduced. In fields where the nematode infestation is great enough to cause damage in scattered small areas, beets should be grown only once in 4 or 5 years. Where heavy infestations occur, the intervals should be increased to one crop of beets in 5 or 6 years. Records are available where rotations as long as 6 to 10 years have proved necessary for a productive crop of sugar beets. The value of crop rotations was considered sufficiently important in England as early as 1935 for sugar companies to include clauses in grower contracts which required certain observances of rotations for growing sugar beets.

With increased sugar beet production in desert areas where temperatures during summer months are very high, the ability of the sugar beet nematode to survive and reproduce under these conditions demonstrates its adaptability. In the Imperial Valley of California this nematode was first discovered in beet fields in 1957. The infestation has now spread to more than 200 fields. Dr. Ivan Thomason of the University of California at Riverside determined that viable eggs in cysts survived summer fallow in surface soils of these fields for three months where temperatures reached over 152°F. He also demonstrated that during one growing season, at least five generations of the sugar beet nematode were produced. This shows the high potential of buildup of this nematode after one crop of sugar beets.

Crops To Avoid In Rotations

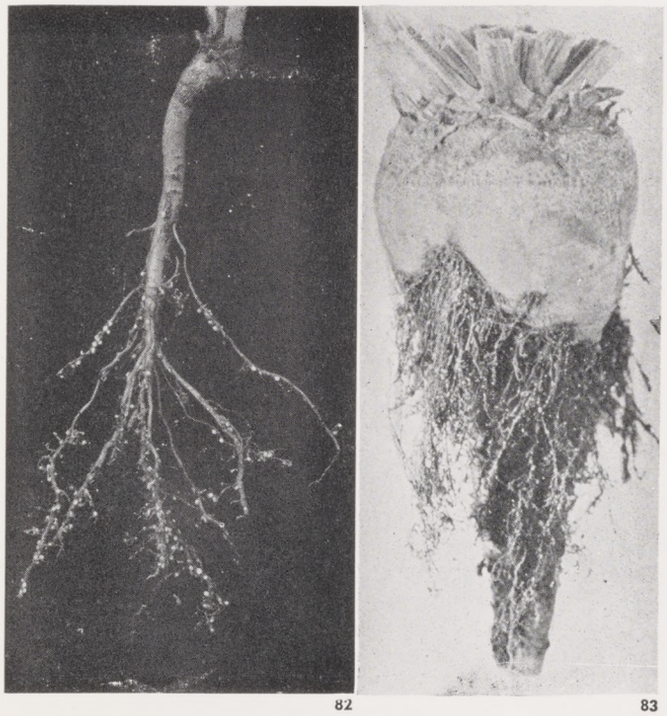
In addition to sugar beets, hosts of the sugar beet nematode include table beet, spinach, Swiss chard, mangel and rhubarb. All the cole crops are excellent hosts including broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, collards, kale, radish, rape, and turnip.

Row crops, where good weed control can be obtained by cultivation and chemicals, appear to result in better rotations. Weed hosts include all the mustards and lambsquarters, sowbane, black nightshade, saltbush, knotweed, dock, pigweed, purslane, shepherdpurse, chickweed, and wild radish. Of course, wild or volunteer beets may be present. Field crops such as alfalfa, corn and small grains are good alternate crops, but effective weed control is sometimes not practiced in such crops and many of the weeds which are good hosts for this nematode are commonly found in such fields.

Tomato has been listed as a good alternate crop in rotations for control of sugar beet nematode.

Continued on Page 40

[1] *Nematologist, University of California, Davis*



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CROP ROTATION DISCUSSED AT MANTECA GROWER MEETING

RALPH S. LAMBDIN, District Manager at Manteca presided at a meeting attended by over one hundred growers on July 29, 1964.

Topic of the meeting was crop rotation, with stress on the importance of rotation as a means for controlling sugar beet nematode.

An outline of the program follows:

Introduction: AUSTIN ARMER

Reason For Rotation: JACK BRICKEY

The Nematode Problem: LAUREN BURTCH

Field Superintendent's Panel: JOHN McDOUGALL, Moderator. Stated problem in local area, listing % acreage on poor rotation in District 2. He then called on the following Field Superintendents for local examples of problems created by lack of good beet rotations:

- Virgil Horton — Introduction of Sugar Beet Nematode in Dixon.
- Joe Hull — Specific 1964 examples of Nematode on plant-back.
- Roger McEuen — Water mold problems on plant-back.
- John Bryan — Clarksburg, the Islands and rotation policies.
- Ernest Moeller—Stand problems, salt toxicity.

Summary and Statement of Contracting Policy: DR. R. T. JOHNSON

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A PANEL of Spreckels Field Superintendents presented evidence in favor of good rotation practices. John MacDougall, Manteca Agricultural Superintendent (Center) led the discussion with Field Superintendents Joe Hull, Ernest Moeller, John Bryan, Roger McEuen and Virgil Horton participating.

CROP ROTATION SHOULD AVOID SUGAR BEET NEMATODE HOST PLANTS

By GEORGE W. WHEATLEY
Agronomist, Spreckels Sugar Company

CROP ROTATION has been demonstrated to be the basic control method for sugar beet nematode. Fortunately, the sugar beet grower has an extremely wide choice of field crops which are not host-plants to the pest.

While host plants for sugar beet nematode are found in only a few specialty crops, a considerable number of common weeds are host plants. Therefore, the choice of a non-host crop is wasted effort if host weeds are allowed to persist.

As a ready reference for sugar beet growers, the tabulation below shows safe crops, unsafe crops and unsafe weeds. This tabulation is an excerpt from the more complete list on the following page.

SAFE CROPS— (Non-Hosts)	UNSAFE CROPS— (Hosts)
Alfalfa	Broccoli
Barley	Cabbage
Carrots	Cauliflower
Castor Beans	Kale
Celery	Mangels
Clover (all)	Radishes
Cotton	Spinach
Cucumbers	Swiss Chard
Field Corn	Table Beets
Garlic	Turnips
Lettuce	
Milo	**UNSAFE WEEDS— (Hosts)**
Oats	
Onions	
Peas	Chickweed
Peppers	Knotweed
Potatoes	Mustard
Pumpkins	Nettle
Safflower	Pokeweed
Strawberries	Pigweed
Sudan Grass	Purslane
Sweet Potatoes	Saltbush
Tobacco	Shepherd's Purse
Tomatoes (presumed)	Sowthistle
Wheat	Wild Radish

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MORE THAN one hundred growers attended the "No Plant Back" Meeting at Manteca on July 29.

List of Plants Tested in the Greenhouse to Determine the Host Range of the Sugar Beet Nematode (Heterodera Schachtii)

GEORGE W. WHEATLEY and J. S. McFARLANE
U. S. Department of Agriculture Experiment Station, Salinas, California

PLANTS	COMMON NAME	CLASS[1]
AIZOACEAE		
Mesembryanthemum crystallinum	Iceplant	2
Tetragonia expansa Murr.	New Zealand spinach	3
AMARANTHACEAE		
Amaranthus blitoides S. Wats.	Tumbling pigweed	2
A. retroflexus L.	Erect pigweed	3
AMARYLLIDACEAE		
Allium cepa L.	Onion	1
Allium spp.	Garlic	1
CARYOPHYLLACEAE		
Stellaria spp.	Chickweed	3
CHENOPODIACEAE		
Atriplex hortensis L.	Saltbush	3
A. rosea L.	—	3
Beta intermedia Bunge	Wild beet	4
B. lomotogona F. & M.	" "	4
B. macrocarpa Guss.	" "	4
B. maritima L.	" "	4
B. patellaris Moq.	" "	1
B. patula Soland	" "	4
B. procumbens Chr. Sm.	" "	1
B. trigyna W. & K.	" "	4
B. vulgaris L.	Mangel-wurzel (mangel)	5
B. vulgaris L.	Red beets (table beet)	5
B. vulgaris L.	Sugar beet	5
B. vulgaris L.	Swiss chard	5
B. webbiana Moq.	Wild beet	1
Chenopodium album L.	Lambsquarter	1
C. amaranticolor	—	2
C. capitatum L.	Strawberry blite	5
C. murale L.	Sowbane	2
C. urbicum L.	—	2
Spinacia oleracea L.	Spinach	3
COMPOSITAE		
Ambrosia psilostachya DC.	Perennial ragweed	1
Carthamus tinctorius	Safflower	1
Lactuca sativa L.	Lettuce	1
L. serriola L.	Prickly Lettuce	1
Peucephyllum schottii Gray	Pigmy Cedar	1
Sonchus oleraceus L.	Sowthistle	3
Taraxacum officinale Web.	Dandelion	1
Xanthium italicum Mor.	Cockle-bur	1
CONVOLVULACEAE		
Convolvus arvensis L.	Morning glory	1
Ipomoea botata	Sweet potatoes	1
CRUCIFERAE		
Brassica campestris L.	Common mustard	3
B. napus L.	Rape	2
B. oleracea L.	Cabbage	5
B. oleracea L.	Cauliflower	5
B. oleracea L.	Brussels sprouts	5
B. oleracea L.	Broccoli	5
B. oleracea L.	Kale	5
B. rapa L.	Turnips	2
Raphanus raphanistrum L.	Wild radish	2
R. sativus L.	Radishes	3
Capsella bursa-pastoris L.	Shepherd's purse	4
CUCURBITACEAE		
Cucumis sativus L.	Cucumbers	1
Cucurbita maxima Duchesne	Pumpkins	1
EUPHORBIACEAE		
Ricinus communis L.	Castor beans	1
GERANIACEAE		
Erodium cicutarium (L.)	Filaree	1
Pelargonium hortorum Bailey	Geranium	1
GRAMINEAE		
Arrhenatherum elatius L.	Tall oatgrass	1
Avena byszantina L.	Oat (red cultivated)	1
A. fatua L.	Wild oats	1
A. sativa L.	Oats (white cultiv.)	1
Bromus inermis Leys	Smooth brome grass	1
Cynodon dactylon L.	Bermuda grass	1
Dactylis glomerata L.	Orchard grass	1
Echinochloa crusgalli L.	Watergrass	1
Festuca elatior L.	Meadow fescue	1
F. elatior L.	Tall fescue	1
Hordeum jubatum	Wild barley	1
H. vulgare L.	Barley	1
Secale cereale L.	Rye	1
Setaria glauca L.	Yellow foxtail	1
Sorghum halapense L. Pers.	Johnson grass	1
S. vulgare Pers.	Milo	1
Triticum vulgare Vill.	Wheat	1
Zea mays L.	Corn (sweet or field)	1
LEGUMINOSAE		
Glycine max	Soybean	1
Lathyrus odoratus L.	Sweetpea	1
Lotus corniculatus L.	Birds-foot treefoil	1
Lupinus spp.	Lupine	1
Medicago hispida L.	California bur-clover	1
M. sativa L.	Alfalfa	1
Melilotus officinalis (L.)	Ann. yellow sweet clover	1
Phaseolus lunatus L.	Beans (lima)	1
P. culgaris L.	Beans (black wax)	1
P. culgaris L.	" (small white)	1
P. culgaris L.	" (Kentucky wonder)	1
Pisum sativum L.	Peas	1
Trifolium pratense L.	Red clover	1
T. repens L.	White clover (ladino)	1
Vica atropurpurea L.	Purple vetch	1
V. faba L.	Bell beans	1
V. faba L.	Horse beans	1
Vigna sinensis L.	Cowpeas	1
MALVACEAE		
Gossypium spp.	Cotton	1
Malva rotundifolia L.	Cheeses (mallow)	1
PAPAVERACEAE		
Eschscholzia californica	California poppy	1
PHYTOLACCEAE		
Phytolacca americana L.	Pokeweed	2
PLANTAGINACEAE		
Plantago lanceolata L.	Narrow-leaf plantain	1
POLYGONACEAE		
Polygonum spp.	Knotwood	3
Rumex acetosella L.	Red sorrel (field)	1
PORTULACACEAE		
Portulaca oleracea L.	Purslane	2
RESEDACEAE		
Reseda odorata	Mignonette	1
ROSACEAE		
Fragaria chiloensis Duchesne	Strawberry	1
SOLANACEAE		
Capsicum frutescens L.	Peppers	1
Lycopersicon esculentum Mill.	Tomatoes	1
Nicotiana glauca L.	Wild tobacco (tree)	1
N. tabacum L.	Tobacco	1
Solanum nigrum L.	Black nightshade	1
S. tuberosum L.	Potatoes	1
UMBELLIFERAE		
Apium graveolens L.	Celery	1
Cicuta douglasii (PC) C. & R.	Water hemlock	1
Daucus sativa DC.	Carrots	1
Petroselinum crispum L.	Parsley	1
URTICACEAE		
Urticaceae gracilis Ait.	Stinging nettle	2

[1] Numbers refer to a numerical classification from 1 to 5, depending upon the severity of attack (Class 1 indicates no infestation and Class 5, severely infected).

AGRICULTURAL MANAGER HUGH MELVIN SUCCEEDED BY JOHN M. KENDRICK

ON AUGUST 31, 1964, Hugh F. Melvin ended a distinguished 40-year career with the Spreckels Sugar Company. Upon his retirement, he was succeeded as agricultural manager of the Company by John M. Kendrick.

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Mr. Melvin was first employed by the Spreckels Sugar Company at its Manteca factory. Within a few months after joining the firm in 1924, he was transferred to the Company's Sacramento district as Field Superintendent. Acreage increased in the Sacramento-San Joaquin Valley to the point that in 1937, the Company constructed a factory in Woodland.

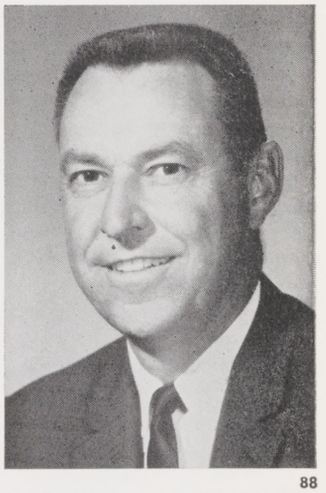
Mr. Melvin became, successively, Assistant Agricultural Superintendent, Agriculturist, and District Manager of the Sacramento and San Joaquin Valley districts. In 1954 he was promoted to Agricultural Manager and transferred to the San Francisco headquarters, where he served until his retirement.

In 1964, the American Society of Sugar Beet Technologists honored Mr. Melvin for his long and distinguished service to the beet sugar industry, by presenting him with the Society's coveted Forty-Year Veteran Award.

In addition to his many contributions to the sugar industry and to Spreckels Sugar Company, Hugh Melvin has been active in civic and community affairs. He is a 32nd Degree Mason and a member of the Shrine, belonging to Ben Ali Temple, Sacramento, California. He also served for many years as a member of the Agricultural Committee of the Central California Chamber of Commerce.

Mr. and Mrs. Melvin will continue to live at 60 Yorkshire Drive, Oakland.

Mr. Melvin's successor, John M. Kendrick, has been associated with Spreckels since 1947, first joining the Company as a Field Superintendent in the Woodland District.



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He later served as Assistant District Manager of the firm's Salinas Valley operations, and in 1957, was transferred to Spreckels' San Francisco headquarters as Assistant Agricultural Manager. In his new capacity Mr. Kendrick will oversee Spreckels company-wide agricultural operations, including contracting, planning, personnel and acreage policies.

Mr. Kendrick is a native of San Diego. His college education was interrupted for service as a Lt. Commander in the U.S. Navy during World War II. Following the war he returned to the University of California, graduating from the Davis campus with a degree in animal husbandry.

He is currently a member of the American Society of Sugar Beet Technologists and the Commonwealth Club of San Francisco.

The Kendricks presently reside in Mountain View, California.

Notes from Our Field Men

MORRIS BALL, WOODLAND

The control of the sugar beet nematode has become one of the major problems confronting sugar beet growers and processors throughout California. Along with the sugar beet nematode the root knot nematode is a growing menace to sugar beet production.

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While there is no soil treatment recommended as economically feasible for control of the sugar beet nematode, economic treatments are available for control of root knot nematodes on most beet crops, especially those grown on lighter soils.

One well known fact concerning the use of volatile chemicals in control of nematodes is that the chemicals are not equally effective in all soil types. In general, this can be attributed to temperature and the rate of diffusion of the chemical through the soil.

Early planting of sugar beets as been recommended through the years as a means of reducing loss due to sugar beet nematode. The main reason why this may be true is that lower winter temperatures favor seed germination and growth while reducing nematode hatching and invasions of host plants. In a great many cases growers are forced to plant their nematode-infested fields at times when the temperatures are not favorable. Also, early planting in most years would have to be done when the aphid populations and flights are most severe, thus putting the early plantings in a position of being susceptible to virus yellows. This combination of

circumstances indicates that rotation is the only practical procedure at this time.

Chemical control of the sugar beet nematode, if it were economical, would eliminate the inconveniences that are present when control is accomplished through crop rotation. The soil requires from 3 to 4 years of non-host crops before satisfactory reduction of the nematode can take place. Rotation is used with success, but the host range is large and includes several common weeds which support these nematodes.

The USDA Agricultural Research Service Experiment Station at Salinas has carried on a great deal of research during the past years in an attempt to develop a variety resistant to the sugar beet nematode. In the past few years progress has been made in this field. Selections have been made that are quite resistant; however, there are other desirable characteristics lacking in these selections. One of the biggest problems is that desirable characteristics as well as resistance are difficult to combine in one plant.

Another interesting point brought out by the USDA is that the sugar beet nematode alone does not always cause very heavy or serious loss in a beet field, but that the secondary infection caused by root-rot in combination with the nematode is highly destructive.

In one particular test they found that root-rot alone decreased the yield by 12.74%; sugar beet nematode decreased the yield by 26.9%, and the combination of root-rot plus the sugar beet nematode decreased the yield by 45.8%.

J. W. HULL, MANTECA

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The appearance of sugar beet nematode in fields near the Manteca factory has reached alarming proportions. Since our grower meeting in July where we attempted to give the growers a picture of the seriousness of this pest, I have found four more infected fields.

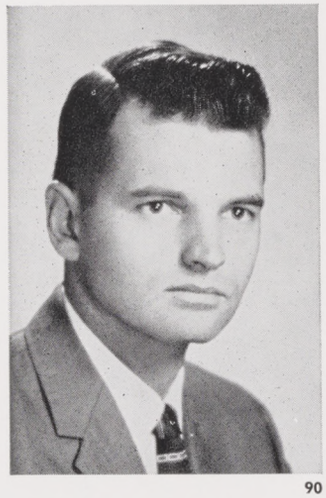
These fields are all close-in factory haul beet areas, and in the past have furnished high quality beets to the Manteca factory.

In most cases, the growers' rotation program has been excellent so that the nematode appears to have moved in on machinery from outside areas.

The growers involved in most cases loan and borrow equipment to and from neighbors. Digging of beets is done by grower-owned harvesters with most growers digging their own and a couple of fields for their neighbors. However, the trucking of beets is historically done by truckers who move into this area from great distances. These truckers have undoubtedly worked in infested fields in the Salinas, Imperial Valley and Clarksburg areas.

I have told the growers to insist on washed equipment before it comes into a field. This they will undoubtedly do.

ROGER McEUEN, MANTECA



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In my district here at Manteca, approximately 14% of the acreage planted to beets are plant-back, or beets behind beets.

Of that acreage, 30% are good beets which are estimated at 20T/A or better. 63% are poor beets which are estimated below 20 T/A, and 7% were abandoned due to Aphanomyces Cochlioides.

Of the other 86% of my acreage (which is not beets behind beets) 90% is estimated at 20 20 T/A or better, and only 10% at less than 20 T/A.

The fields which are especially poor are those where beets were spring harvested and then put back into beets. I don't think we are going to run into any difficulty in my district in regard to Company policy of "No beets behind beets." So far it has been very well received.

M. G. DAUGHERTY — WOODLAND

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Sclerotium Rolfsii is again making its presence known in my district. I visited a field last week that had several patches of Sclerotium scattered throughout; however, the damage at this time is limited to these patches. There is enough of a start in this field that under ideal conditions of high temperature and moisture, it could severely reduce the yield and sugar.

Without Sclerotium, this field had a potential of thirty tons per acre. In talking with the grower, it was stated that when the beets were in four years ago no sclerotium was evident. I would suspect that the fungus was present at that time although in insufficient quantity to notice or cause alarm.

CAREFUL ROTATION

Continued from Page 35

Recent work at Salinas indicates that the sugar beet nematode can reproduce on this crop. In work conducted at the University of California, Davis, 16 tomato varieties were checked as hosts. Penetration of roots by larvae was noted in about one-half of these varieties. However, very few of these completed their life cycle to produce cysts on the roots. An average of less than one-half cyst per plant was recovered from four varieties and none were recovered from the other varieties.

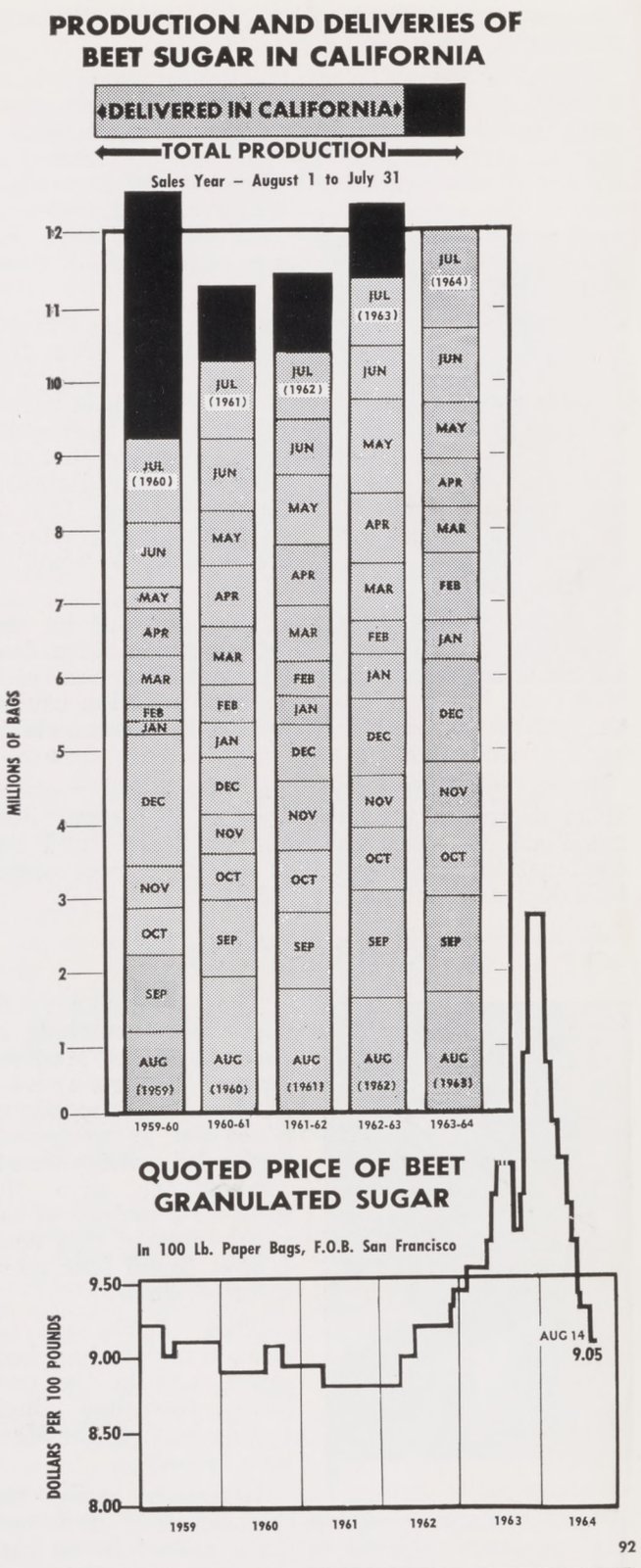
Sanitation

With the expansion of sugar beet acreage by planting sugar beets in new fields or in new areas of the state, it becomes imperative that all possible precautions be taken to prevent or delay the introduction of the sugar beet nematode into these new areas. Cysts are easily carried in dirt and debris clinging to machinery such as tractors, trucks, harvestors, and planters. Thorough cleaning of such machinery before moving them to new fields should be practiced. The most effective method for cleaning such equipment is by use of steam generated by portable steam generators. Many garages use such equipment for cleaning engines. When not available, the use of a strong force of water from a hose to insure thorough removal of dirt is almost as effective. Of course, continued care in disposal of tare dirt from beet loading areas and factories should be observed.

Early Plantings

It is known that sugar beet seeds will germinate and plants grow at soil temperatures which are too cold for the sugar beet nematode to have much activity. This information has been utilized in some areas for minimizing losses due to nematode attack. Losses of young seedlings may be lessened by planting sugar beets as early in the spring as possible. Good yields of beets have been obtained on heavily infested areas when plantings were made in January whereas plantings made in April were almost total losses. Of course, this will not be possible in many areas such as those in the desert where sugar beets are planted in early fall and harvested in the spring.

Carefully planned crop rotations used in association with sanitation and early planting will aid the sugar beet grower not only to obtain profitable crops on fields infested with this nematode, but in addition, it will prevent or delay the introduction of this pest into new areas.



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AUSTIN ARMER, EDITOR SPRECKELS SUGAR COMPANY WOODLAND, CALIFORNIA

SPC - DAVIS

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SPRECKELS SUGAR BEET BULLETIN

VOL. 28 NOVEMBER-DECEMBER, 1964 NO. 6

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SUGAR BEET PLANTING

in California has become the starting point for complete field mechanization.

BED SHAPING

FERTILIZER APPLICATION

WEEDICIDE INCORPORATION

are now a regular part of the planting operation,

thanks to advanced, ingenious machinery design.

SUGAR BEET SEED AND PLANTERS

By AUSTIN ARMER
Agricultural Engineer
Spreckels Sugar Company

SUGAR BEET SEED, as issued to its growers by Spreckels Sugar Company, is continuously undergoing improvement — both in varietal characteristics and in the quality of processing.

Varietal improvement is a slow, painstaking process. It is one of the primary functions of the Spreckels Agricultural Research Program (Spreckels Sugar Beet Bulletin, Sept.-Oct. 1963, p. 38, and May-June, 1960, p. 18). The several varieties currently issued to its growers by Spreckels Sugar Company were achieved after many years of breeding work, and their characteristics are maintained by a never-ending testing procedure under all field conditions.

Processing methods are also subject to constant scrutiny. As new or improved machines and methods become available, they are put to work at the Company's central processing plant at Spreckels, California. The capital improvement program for this plant included, during 1964, the addition of several major items contributing toward improved seed quality.

A Carter cylinder separator was installed to remove the last vestige of foreign seeds. An entirely new system of fungicide and insecticide treating was installed along with associated bulk storage and automatic bagging facilities.

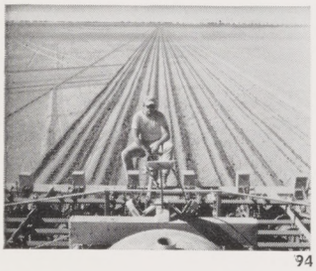
PLANTER DEVELOPMENTS

Allis-Chalmers Farm Equipment Division has introduced their 500 Series planters and planter units. The complete pull-type planter operates on rows spaced from 18 to 30 inches, and has provision for applying granular fertilizer or weedicide. Liquid weedicides may also be applied.

The planter units, adapted to tool bar mounting either on the tractor or a sled, offer a choice of runner opener (No. 51) or double disc opener (No. 52) for use in trashy seed-beds.

The Ventura Small Seed Precision Planter (J. L. Mitchell, Oxnard, California) is a refinement of a long established line of beet and bean planters. The current model differs from its predecessors mainly in having an agitator in the seed hopper. This overcomes a previous fault — the variation in seeding rate as the hopper contents varied from full to empty.

The Ventura planter is offered as a unit adaptable to mounting either on the tractor tool bar or in a sled carrier.



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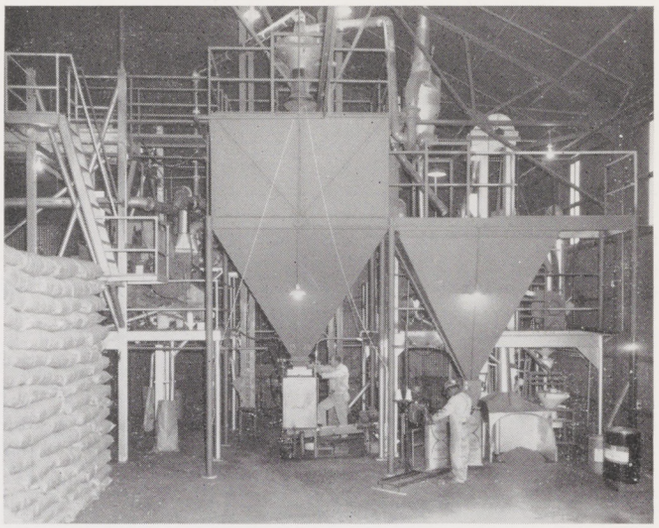
COVER COMMENT

The Reiff planting unit (described on page 46) is an example of the many grower-built machines which combine the operations of listing, bedshaping, planting and fertilizing.



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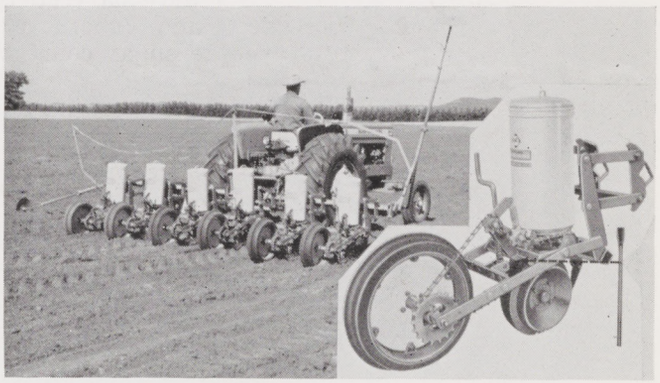
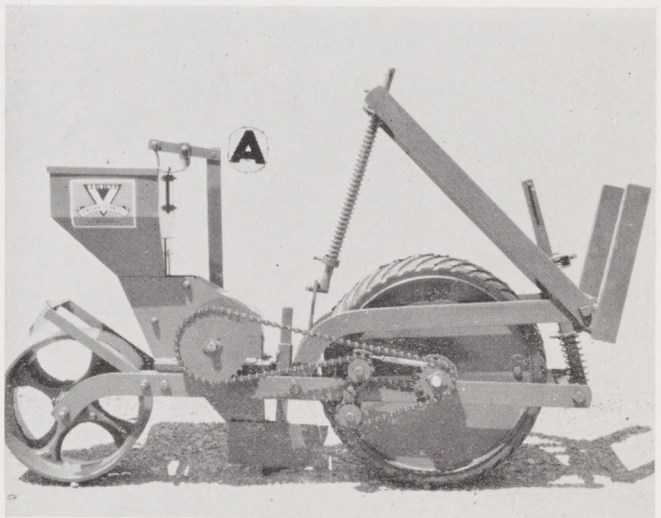
MAJOR IMPROVEMENTS at the Spreckels seed processing station include a new fungicide-insecticide treating system, as well as storage and cleaning facilities to maximize seed purity.



Allis-Chalmers Photo 96

ALLIS-CHALMERS No. 52 planter units may be mounted on the tool bar of either a tractor or sled carrier. Inset shows details, including short, straight seed dropping tube.



J. L. Mitchell Photo 97

VENTURA PLANTER now features an agitating device (A) to maintain uniform planting rate regardless of amount of seed in hopper.

4-H SUGAR BEET PROJECTS SET RECORDS

DURING OCTOBER and November, young sugar beet growers at each of the four Spreckels factories gathered to check the results of their 4-H sugar beet projects. When the final tabulations were completed, it was obvious that the state's vital sugar beet industry will be in good hands when the youngsters take over as commercial growers.

The 4-H beet project, sponsored by the Spreckels Sugar Company in cooperation with the University of California Extension Service, is not primarily a contest, but rather an opportunity to learn about producing sugar beets. During the project the participants conduct fertilizer trials, date-of-planting tests, and introduce other variables which affect the total yield.

While carrying the crops to maturity, the youthful growers received instructions on sugar beet culture from their farm advisors and Spreckels agricultural specialists. The crops were harvested, yields were carefully recorded, and laboratory samples taken to determine average sugar content of each crop.

The beets were then processed at the Spreckels Sugar factories and appropriate amounts of sugar returned to each participant. Silver sugar bowls were awarded for outstanding effort.

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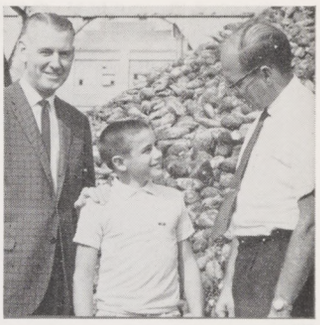
SHARON JOHNSON (left) of San Benito County and ROSEMARY SCHOCH (Monterey County) received silver sugar bowl awards.



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RICHARD RICHINA (center) is congratulated by District 2 Manager Ralph Lambdin (left) and Farm Advisor Franz Kegel.

Woodland Democrat Photo 100

MEL VOOS, Spreckels field superintendent, presents awards to Susan Grimm (Colusa), Jack Cramer (Yolo) and Bill Rayn (Solano).

Junior Honor Roll For 1964

These boys and girls all produced crops equivalent to 25 tons per acre or over. Congratulations!

DISTRICT 1

4-H Grower	Tons/Acre
SAN BENITO COUNTY	
Sharon Johnston	45.57
Cecilla Johnston	40.40
Albert Ribeiro	37.97
David Mederios	36.30
Michael Rey	29.61
MONTEREY COUNTY	
Rosemary Schoch	66.98
Margaret Piffero	61.81
Steve Robasciotti	59.24
John Gill	53.16
John Gill	51.64
John Gill	47.08
Stephen Latesa	45.41
Joy Whitson	37.82
Jack Wideman	36.75
David Muther	32.50
Joy Whitson	32.04
Kathy Wideman	31.74
Ronald Panziera	30.80
Craig Bianchi	29.31
Joy Whitson	28.09
Steve Piffero	27.18
Raymond Kearney	26.12
Steve Ferrasci	25.21

DISTRICT 2

MERCED COUNTY	
Randy Bertao	62.7
Smiley Curtis	40.3
Pat Miguel	35.1
Ronnie Lutz	26.9
SAN JOAQUIN COUNTY	
Richard Richina	49.7
Dave Olmstead	35.0
Richard Richina	38.4
Chris Machado	31.5
Dave Nishida	29.6
Douglas Johnson	27.5
Dave Nishida	27.3
Martin Franko	27.0
Joyce Nishida	27.1
Dave Nishida	26.8
Sarah Due	26.8
Virgil Celle	26.1
STANISLAUS COUNTY	
Ann Sorrentino	29.0

DISTRICT 3

YOLO COUNTY	
Jack Cramer	36.7
Ken McCorkle	28.5
Dale Woltmon	27.6
Darrel Hardy	26.5
Randy Timothy	25.0

DISTRICT 4

MADERA COUNTY	
Gary Thornton	42.1
George Barnett	32.8
Judy Bare	30.8
Cathy Longatti	27.6
FRESNO COUNTY	
James Petrucelli	55.17
Frank Coehlo	47.77
Anthony Coehlo	46.17
Karen Hansen	37.75
Russell Hansen	37.75
Tommy Stine	37.17
Steve Coluci	37.02
Jimmy Coluci	37.02
Morrie Buchoff	33.39
Leoenrad Garcia	32.67
Wayne Anderson	27.58
Joe Silveria	29.04
Benny Cornelius	26.42
KINGS COUNTY	
Jack Rahl	61.5
Stanley Cardoza	40.6
Roger Flood	39.3
Richard Vieira	38.8
Tim Dutra	31.1
Dan Dutra	30.8
Tom Shirley	30.2
Tim Niswander	27.0
Raymond Stripling	26.4
TULARE COUNTY	
Gary Weisenberger	68.50
Alvin Vieira	61.41
Doug Marquez	52.14
Paul Crawford	48.78
Lestor Gregory	47.91
Steve Williams	45.44
Bill Asay	45.44
Jim Crawford	50.05
Larry Pedroncelli	44.28
Bill Whitendale	43.56
Paul Shires	42.10
Darrell Grove	40.65
John Martin	39.20
Gary Todd	38.76
Larry Garlock	38.62
Pat Shires	38.47
Fred Naylor	38.47
Charmagne Lawrence	37.17
Bill Naylor	35.98
Louis Martin	34.99
Jerry Martin	34.55
Joe Martin	33.25
Phillis Bowman	33.68
Cathy Martin	33.54
Jessie Encinas	33.39
Jerry Saylor	32.08
Jan Simmons	30.49
Donald Marquez	30.49
Pam Swall	30.05
Janet Bowman	29.62
Louis Whitendale	28.9
Mary Encinas	28.74
Dale Simmons	28.45
Dean Martin	27.73
Dale Martin	27.73
Nickie Dias	26.86
Mike Adams	26.42
Donald Carter	26.28
Richard Marquez	26.13
Mathew Conrad	25.70
Ramon Encinas	25.26

SOME OUTSTANDING EXAMPLES OF SUGAR BEET TOP UTILIZATION

By S. L. STOVALL
Livestock Specialist,
Spreckels Sugar Company

THROUGHOUT THE YEARS California beet growers have tried in a number of ways to make better use of the valuable livestock feed available in sugar beet tops. Tops have been field fed, made into ensilage and baled; however, with only isolated exceptions, these efforts have been unsuccessful.

It has been found that field pasturing often ties up the land too long, thus interfering with preparing the field for further cropping. Beet top ensilage has frequently proven to be unsatisfactory due to difficulties in co-ordinating all the machinery necessary for top harvest during the beet digging operation. Along with the mechanical problems in harvesting tops for silage, few growers have been able to produce a satisfactory feed from top silage. Frequently, the resulting material came out of the pile in such a foul smelling, unpalatable condition as to make it useless as a feed. For the most part baling of beet tops has enjoyed only limited success due to difficulty in getting properly cured tops, relatively free of dirt, put up in bales that could be handled with reasonable ease.

After recounting these numerous unsuccessful experiences in salvaging beet tops, it is a pleasure to report how, with improved equipment and a real desire to succeed, some growers are realizing the bonus that tops can add to a beet crop.

One of the best examples of this can be found in the Fresno-Tulare County area, where this "will to succeed", along with a harvest pattern suited to top recovery and a demand for additional cattle feed, has resulted in several instances of successful top salvage.

NEW MACHINES CONTRIBUTE TO SUCCESS

Improved performance can be found in any of several beet topping units that slice off the top and crown and deliver them to a windrow. This equipment is so designed that the crowns and tops from four rows of beets are deposited in one windrow. Since the tops are removed ahead of beet root harvest, they are essentially free from the dirt that was usually associated with such an operation in the past.

Such machines as the Lockwood, Wescon, Speedy and Farmhand toppers are examples of machines of similar design wherein a topping blade is height-gaged for each beet; the severed top with crown is caught by a finger pickup drum, and tops from two or four rows are delivered to a windrow.

Marbeet also has an attachment which accomplishes this same end, and International Harvester has a topping unit under development which will also clean and windrow beet tops.

It is general practice to combine these 4-row windrows into one windrow containing the tops of eight rows of beets. This is accomplished by lifting the topper units and picking up the windrow with the pickup and windrowing portion of the topping machine. This operation fluffs up the tops and the final 8-row windrow cures very well.

More of the crown is removed with these toppers than is the case with flail types, and since the crown is high in energy, a more nutritious feed is available than from leaves alone. From the windrow, the tops can be field fed, baled or picked up and stacked loose.

FIELD PASTURING BEET TOPS

Pasturing of the windrows results in nearly 100% use of this material, since far less is trampled into the soil than if the tops are spread throughout the field. Gains of around 1.5 pounds a day on yearling cattle seem to be accomplished in most cases of field pasturing.

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THE AUTHOR examines windrow-cured tops on the Deavenport contract at Five-Points.

The Deavenport ranch near Five Points in Fresno County has now found windrow feeding of tops a valuable phase of their beet farming operation. They like to have a barley stubble field or other source of roughage available to cattle pasturing beet tops. Here it is believed that their range cows with fairly large calves make the best use of tops.

Harvesting is done in two stages. A Speedy topper equipped with an auger discharge deposits a windrow of tops from four beet rows. These windrows are on 10-foot centers.

Root harvesting follows topping. A Farmhand lifter-loader (tank type) delivers beets from two rows to the truck. Because the windrows are on 10-foot centers, there is no occasion to run over them with either the lifter or the truck.

BALING FIELD-CURED TOPS

A unique system of top salvage is offered by Russell Keely, who operates as a commercial harvester in the Central Tulare County area. He makes arrangements to purchase tops from fields that he harvests. These tops are windrowed as described above and later baled and stacked for manger feeding. After the windrows have been combined and cured, an International 255 baler picks up the cured 8-row windrows and deposits the bales in the field.

In addition to harvesting beets commercially, Mr. Keely also digs the beets on Rogers Farms Inc. Keely and Rogers operate as a partnership in harvesting and top feeding. They windrow the tops

from around 750 acres of beets on Rogers Farms and contract harvest on another 750 acres. The tops from the latter beets are baled. Thus around two months of pasturing followed by two months of baled top feeding are available to their cattle. They report that they can finish plainer type steers to standard slaughter grade on this program.

The "will to succeed" referred to previously is well illustrated by this operation. With a cash investment in the tops, they have to succeed in salvaging this material. Therefore, the many breakdowns that make coordinating top salvage with beet harvesting a difficult job, have to be overcome. Here too, the need for a relative low cost cattle feed has prompted these men to find a way to use beet tops to a better advantage.

PELLETING DEHYDRATED SUGAR BEET TOPS

In the Sacramento Valley the Sutter Basin Corporation conducts an extensive business of selling and feeding pelletized feed stuffs. Because the principal ingredients of these pellets are crops harvested in the summer and early fall, management of the Sutter Basin Corporation has investigated pelletizing sugar beet tops which become available in the northern Sacramento Valley after the other feed stuff crops have been harvested.

An experimental harvest of sugar beet tops for pellets was conducted on October 13. A four row Speedy Model STL 600 top-salvage harvester was used to place tops and crowns from four rows into windrows.

A portion of the windrowed tops was picked up as harvested, immediately chopped by a International Pick-Up Chopper, blown into trailer boxes and promptly dehydrated in the Heil drier normally used for alfalfa dehydration.

The dried material was run into a hammermill and finally made into pellets ¼" in diameter by 1 inch long.

A second experiment involved curing the windrowed tops for four days after having picked up the windrow with the same Speedy top-salvage harvester and combining 4 rows into a single 8 row windrow. The same process was again repeated — windrow picked up, material dehydated and ground into pellets. Both experiments resulted in the production of pellets having excellent appearance and odor. Assays for moisture and vitamins are in progress.

The freshly windrowed tops had a moisture of 76%; the tops cured for 4 days had a moisture content of 35% and the finished pellets had a moisture content of 5%.

In conclusion, it would appear that, given dependable equipment, a use for the feed that is available and a desire to get the job done, beet tops can contribute far more to the return from growing sugar beets than has generally been realized in the past.

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Russell Keeley of KRC Harveseting Company displays his baled sugar beet tops.

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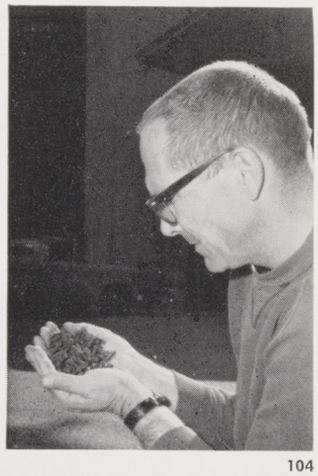
Windrowed tops from 8 rows of beets, well cured and ready for baling.



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Feed mill manager James Hefferton examines some experimental beet top pellets.

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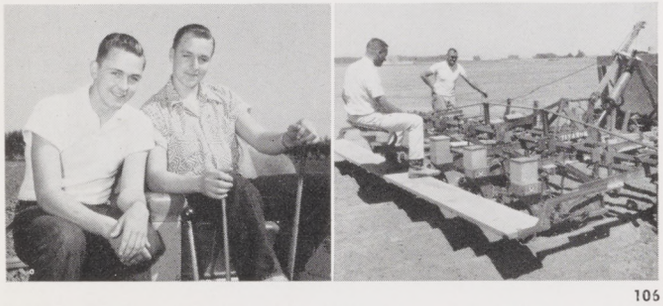
I.H.C. pickup chopper at work on Sutter Basin Corp. beet field. Windrowed tops from 8 beet rows are cured to 55% moisture, and chopped preparatory to drying, hammer-milling and pelleting.

4-H SUGAR BEET PROJECT WAS START OF BEET GROWING CAREER

IN 1951 Wesley (17) and Randy (15) Reiff were the first 4-H Club members to undertake a sugar beet project in the Woodland Factory District. Sons of Paul Reiff, veteran Spreckels grower at Yolo, their project yielded a 25.67 ton per acre crop on 6.87 acres.

Now in 1964, they are in responsible charge of 520 acres of beets covered by five contracts. Their 1964 crop was planted with the combine pictured on this issue's cover. The cover caption ". . . advanced, ingenious machinery design" surely applies to this planting combine.

A six-row Johnson Plantivator carries listing shovels, bed shapers and Ventura planter units (described elsewhere in this issue). An aqua ammonia applicator rig precedes the sled tool carrier. This rig is provided with its own ground wheels, and a tool bar carries the applicator chisels. A special hitch was designed for the fertilizer rig so that the sled tool carrier would trail properly, with its line of draft properly related to the tractor drawbar in both horizontal and vertical planes.



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LEFT—Wesley and Randy Reiff in 1951, when their 6.87 acre contract was Yolo County's first 4-H sugar beet project.

RIGHT—Randy and Wesley Reiff with the 6-row planting-fertilizing combine they developed for the 520 acres they planted in 1964.

CONSTRUCTION BEGINS ON FACTORY 5

CONSTRUCTION GOT UNDERWAY on November 19 near Chandler, Arizona, on Spreckels Sugar Company's fifth beet sugar factory.

On hand for the traditional ground breaking ceremony were Arizona Governor Paul Fannin, Floyd N. Smith, Phoenix, Chairman of the Arizona Sugar Beet Committee and Guy D. Manuel, San Francisco, President of Spreckels Sugar Company.

Immediately following the turning of the symbolic first spade of earth, heavy construction equipment moved in to begin levelling the 650 acre factory site, located five miles south of Chandler at Highway 87 at Superstition Road.

The big construction project will take approximately 18 months to complete. The plant is scheduled to begin receiving beets in the spring of 1967.

"We are happy to be underway," Manuel said.

"However," he added, "the real credit for bringing the sugar beet industry to Arizona belongs to the State's Sugar Beet Committee."

Arizona Photographic Associates 107

GUY D. MANUEL (left) Spreckels Sugar Company president assists Floyd M. Smith (center) and Arizona's Governor Paul Fannin at the ground-breaking ceremony.

Laughter was caused by suggestion for securing either longer shovels or shorter presidents.

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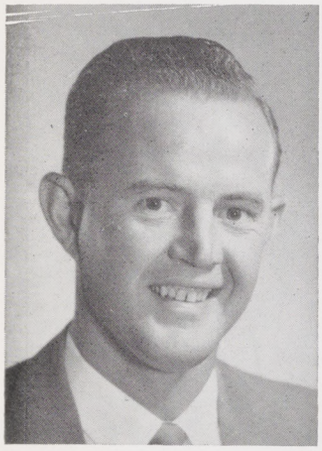
THE REIFF 6-row planting combine is built around a Johnson Plantivator sled tool carrier, preceded by an ammonia tank trailer with tool bar and applicator chisels. Sled is tooled up with lister shovels, bed shapers and Ventura planter units.

"Without their hard work in obtaining a sugar beet acreage allocation, their would be no basis for building the Chandler factory," the sugar company executive declared.

Arizona received a 20,000 acre allocation from the national sugar beet acreage reserve beginning with the 1966 crop year. The state won out over 22 other areas vying for the sugar beet acreage.

Notes from Our Field Men

VERNON SHERWOOD, OCTOL



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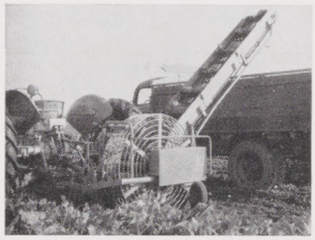
A new sugar beet harvester made its appearance this past week. This machine is called the "Mads-Amby" and is made in Denmark and imported into this country by Speedy Manufacturing Co. The machine is being tested by Speedy to see if it might be adapted to California conditions. Ten machines have been imported; only one is in California; the others are being tested in Washington, Idaho, and Utah. The machine can be adjusted to various row spacings. Here in Tulare, it was used to dig two 30" rows. The machine is not equipped with a topper, so beets must be pretopped.

The machine uses a novel principle to dig beets. It vibrates a steel spike at one side of each beet row. These vibrating spikes shake the two rows together and put the beets onto a shaking table, and thence to the truck. The machine is very small and quite simple; it was developed in Denmark to harvest beets in a wet condition, so Speedy was glad to see it work in dry soils. Speedy estimates that a two-row machine could retail in the United States for about $2,800.



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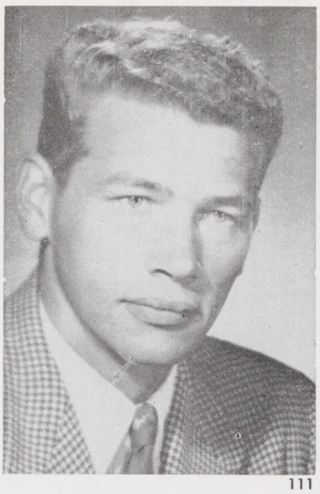
EDITOR'S NOTE: We saw the Mads-Amby lifter-loader at work in weed-free beets and light semi-peat soil on upper Liberty Island (upper photo). It delivered very clean beets with very few clods, as shown in the lower photo. Root recovery was quite good. However, any grass roots in the row are delivered with the beets.

The machine is ingeniously designed and as neatly built as an aircraft engine, which raises the question of durability under rugged California conditions.

A similar vibrating beet lifter principle was developed in 1940 by Powers and Tramontini, University of California, (Proceedings, American Society of Sugar Beet Technologists, Vol. 3, 1942, P. 255).

NORMAN DAWE, GILROY



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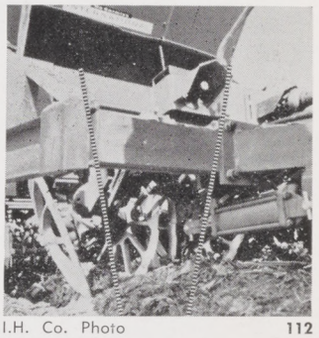
Complaints from commercial harvester men are justified, I believe, when the spacing between rows on the bed within a field varies as much as six inches, or when the beet rows are planted only 11 inches apart on a bed. Such complaints are coming from the operators of the old-style marbeet big-wheels. Why anyone would set out to plant on an 11" - 29" basis is a puzzler, but the results of trying to harvest this field with a big wheel were downright expensive to the grower. The beets would roll as they hit the divider and then be cut on a sharp angle rather than straight across as they hit the stripper bars, leaving extra large crowns in the field. Additional help was necessary to try to recover these severely cut crowns, and the beets that rolled clear off the spike wheel because they came up on their side.

Now that we are about to start the planting season I think we should stress the importance of adequate spacing between the rows on the beds, and also the necessity of keeping the beets on top of the beds, not on the shoulder or sides. Rolling beets for crusting problems is perhaps a necessary evil, but rolling to conserve moisture becomes a costly thing at harvest time due to compaction of the soil and outward spreading of the seedling beets.

EDITOR'S NOTE: International Harvester Co. has recognized that beets on 2-row beds slant outward.

The IH 24 Beet Harvester is now available with tilting lifter wheels (dotted lines, right).

The new IH 24 Harvester is shown below, operating nicely on 14-26 inch 2-row beds.



I.H. Co. Photo 112

I.H. Co. Photo 113

STATE CHAMBER OF COMMERCE ISSUES REPORT OF WEED CONTROL COMMITTEE

A NEWLY ISSUED 42 page booklet reporting the results of a seven year survey is suggested as "required reading" for all sugar beet growers and landowners.

The California State Chamber of Commerce formed its Statewide Weed Committee in 1956. Membership consisted of representatives from the State Department of Agriculture, County Agricultural Commissioners, University of Californa, California State Polytechnic College, City, County and State operations agencies, industrial groups, Farm Bureau and the Agricultural Council. Forty-four specialists formed the committee, whose Chairman was J. Earl Coke, Vice President, Bank of America.

The Committee's work was guided by a resolution which states: "That the State Chamber of Commerce favors such research and weed control measures as will aid in preventing the dissemination of weeds in California, and are consistent with the economic welfare of the State."

Beet growers or landowners can acquire a copy of the report at no charge by requesting

REPORT BY THE
STATEWIDE WEED CONTROL COMMITTEE
OF THE CALIFORNIA STATE CHAMBER OF
COMMERCE, 1964.

The address of the Chamber is 350 Bush Street, San Francisco 4, California.

ANNUAL CALIFORNIA WEED CONFERENCE JANUARY 19 TO 21, AT FRESNO

THE SEVENTEENTH Annual California Weed Conference will convene January 19, 20, and 21, 1965, in Fresno, California at the Hacienda Motel. This meeting will cover equipment and vegetation control problems of interest to both industry and agriculture.

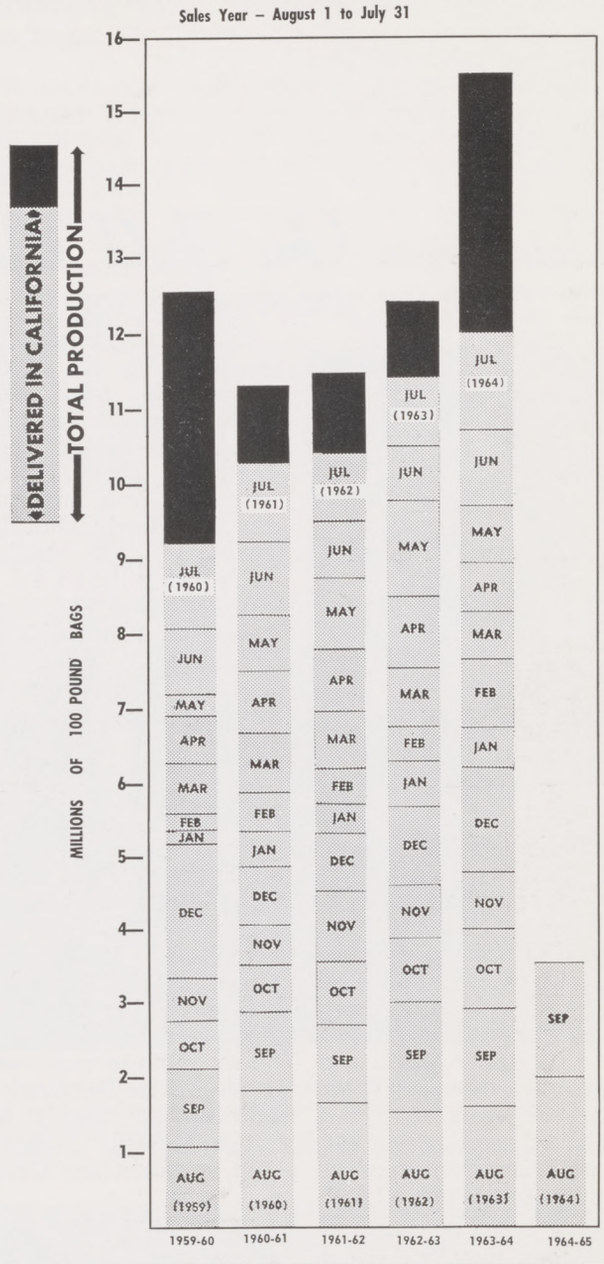
Representatives from industry, California Department of Agriculture, Council of California Growers, National Agricultural Chemicals Association, United States Department of Agriculture, and University of California, will participate in the program. Such aspects as selective weed control in crops, range weed control, industrial weed control, soil residues of herbicides, development of a pesticide, flame weed control, weed control equipment, and losses caused by weeds will be discussed.

The entire three-day conference will be held at the Hacienda Motel, Highway 99 at Clinton, Fresno.

SPRECKELS SUGAR BEET BULLETIN is issued bi-monthly by the Agricultural Department of Spreckels Sugar Company as a service to its growers.
Mention of specific methods, devices and implements does not constitute an endorsement by the Company.
All photographs by the editor unless otherwise indicated.
AUSTIN ARMER, EDITOR
SPRECKELS SUGAR COMPANY WOODLAND, CALIFORNIA

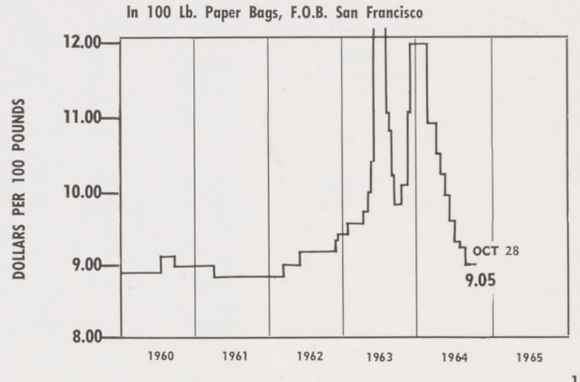
PRODUCTION AND DELIVERIES OF BEET SUGAR

Sales Year – August 1 to July 31



QUOTED PRICE OF BEET GRANULATED SUGAR

In 100 Lb. Paper Bags, F.O.B. San Francisco



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